USER GUIDES

INSTALLATION AND QUICK-START GUIDE
CONNECTION GUIDE
OPERATING GUIDE
REMOTE COMMUNICATIONS GUIDE

E-Vision 8000 Series

High Brightness Digital Video Projector



Rev A April 2012

112-796A

About these Guides

Please read this guide carefully before using the projector, and keep it handy for future reference.

A serial number is located on the back of the projector. Record it here:

Symbols used in these guides

Warnings

ELECTRICAL WARNING: this symbol indicates that there is a danger of electrical shock unless the instructions are closely followed.

WARNING: this symbol indicates that there is a danger of physical injury to yourself and/or damage to the equipment unless the instructions are closely followed.

Notes

NOTE: this symbol indicates that there is some important information that you should read.

Product revision

Because we at Digital Projection continually strive to improve our products, we may change specifications and designs, and add new features without prior notice. Projectors built prior to this revision of the Operating Guide may therefore not include all the features described.

INSTALLATION AND QUICK-START GUIDE

E-Vision 8000 Series

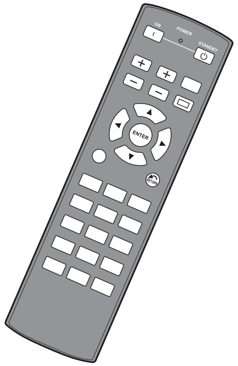
High Brightness Digital Video Projector



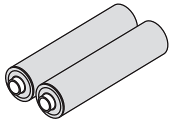
Rev A   April 2012

CONTENTS

What's in the Box?



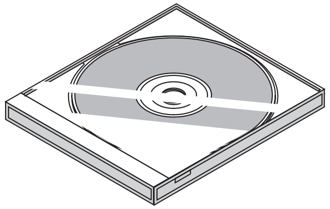
Remote control (112-532)



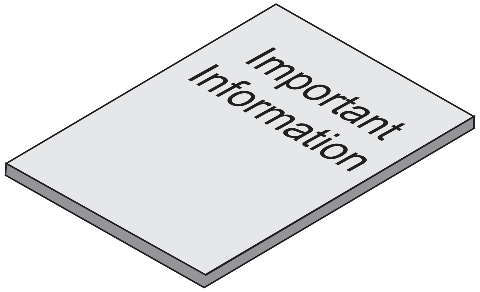
2x AAA batteries



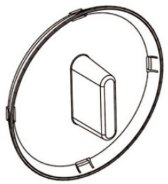
Projector



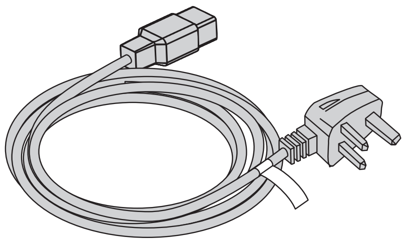
User Guides on CD (112-456)



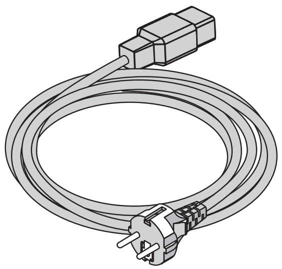
Important Information (112-797)



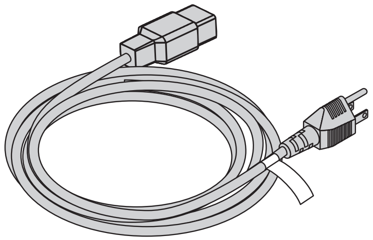
Lens cap



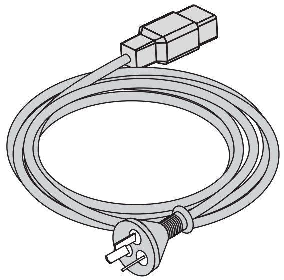
Power cable, United Kingdom (112-814)



Power cable, Europe (112-816)



Power cable, North America (112-815)



Power cable, China (112-817)

Notes

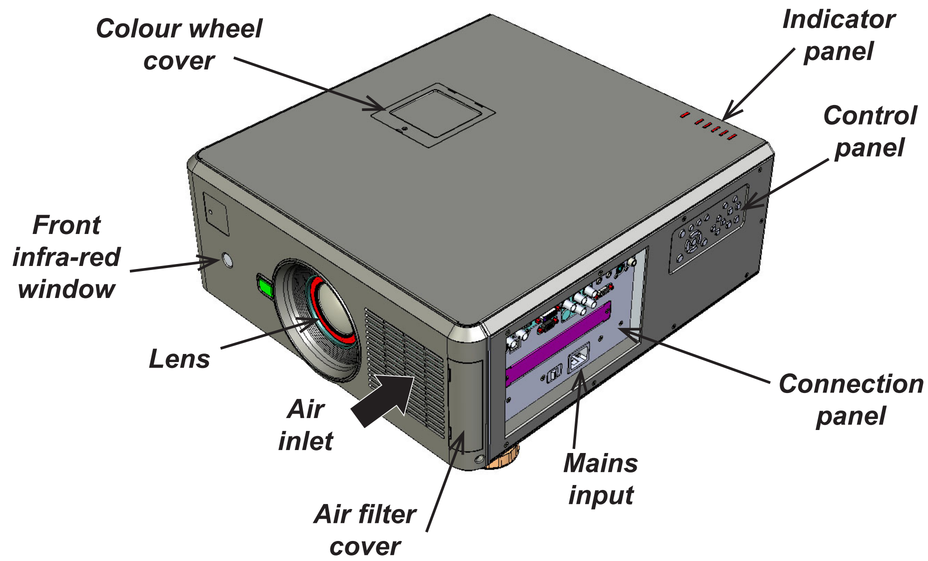
Make sure your box contains everything listed. If any pieces are missing, contact your dealer.

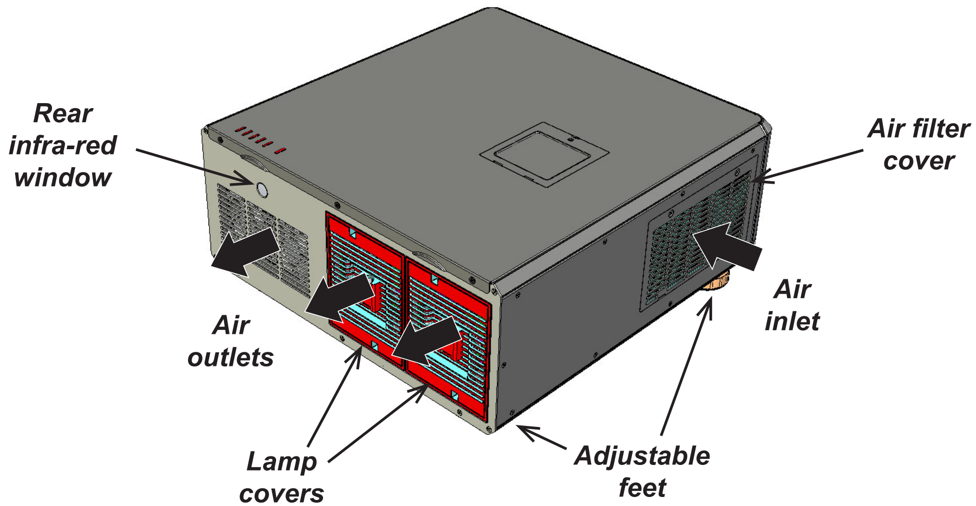
You should save the original box and packing materials, in case you ever need to ship your Projector.

Only one power cable - dependent on the destination territory - will be supplied with the projector.

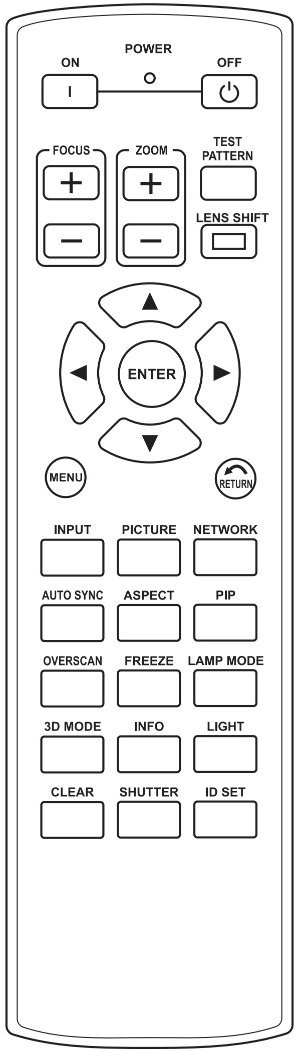
Getting to Know the Projector

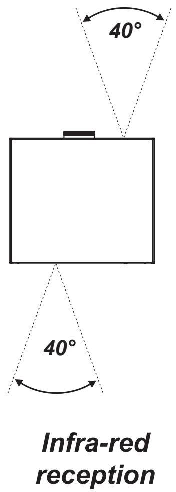
Front and rear views





Remote control





Notes

The projector can use an infra-red or a wired remote control.

Some of the controls are duplicated on the projector control panel, as shown on the next page.

For full details of how to use the controls and the menu system, see the ***Operating Guide****.*

The air filters should be cleaned or changed regularly, depending on the installation environment.

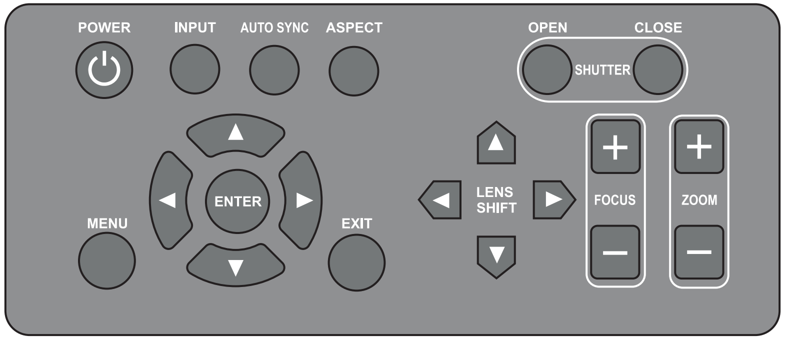
The filters should be changed at the same time as the lamp is changed.

The projector lens is shipped separately.

Control panel

Some of the controls from the remote control are duplicated on the projector control panel, as shown below.

The **EXIT** *button has the same function as the* **RETURN** *button on the remote control.*



Indicators

SHUTTER ***off*** = OPEN ***green*** = CLOSED

TEMP ***off*** = NO ERROR flashing red = ERROR (temperature)

LAMPS 1,2 ***off*** = OFF

flashing red = LAMP ERROR ***red*** = END OF LIFE

flashing green = LAMP WARM-UP ***green*** = ON

STATUS ***off*** = NO ERROR

flashing red (1 flash) = COVER OPEN ***flashing red (4 flashes)*** = FAN ERROR

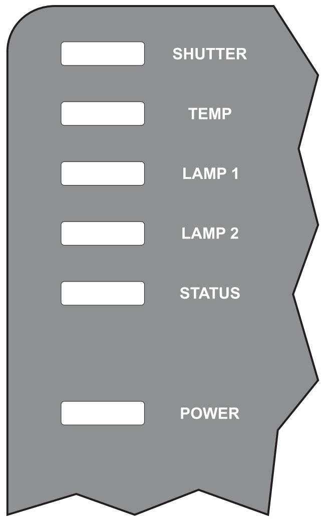
red = SYSTEM ERROR

POWER ***off*** = NO POWER

green = normal RUNNING mode ***red*** = STANDBY mode

flashing green = PROJECTOR WARM UP

flashing amber = PROJECTOR COOL DOWN



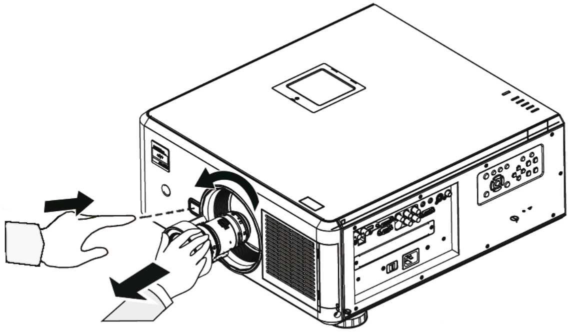
Notes

For full details of how to use the controls and the menu system, see the ***Operating Guide****.*

Changing the lens, lamps, filters and colour wheel

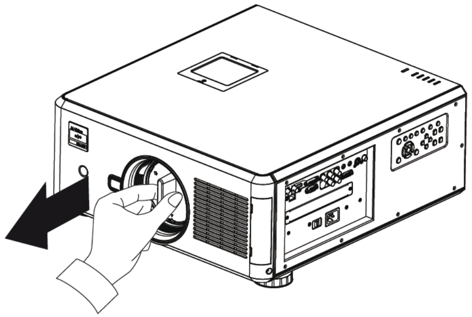
Removing the lens

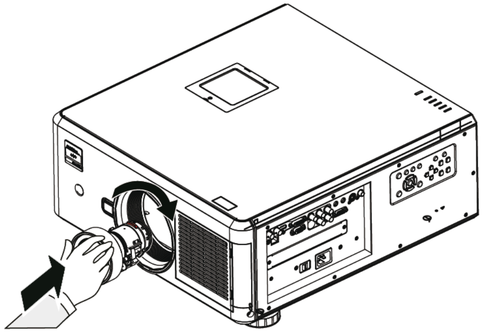
- Push in the lens release lever, and turn the lens anti-clockwise.
- Remove the lens.



Fitting the lens

- Remove the lens cap.
- Position the lens so that the labels are at the top, and gently insert it all the way into the lens mount.
- Push the lens in firmly, and turn it clockwise until it clicks into place.





Notes

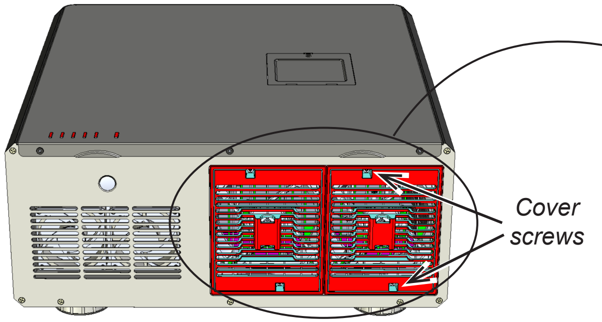
Always allow the lamp to cool for 5 minutes before:

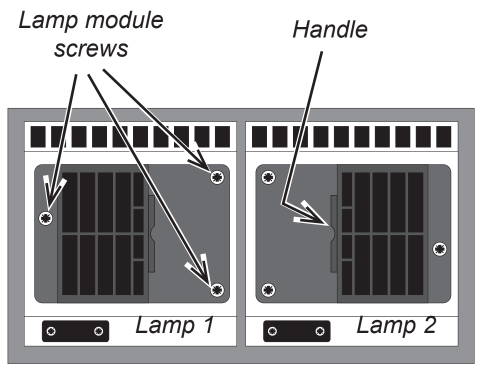
- disconnecting the power
- moving the projector
- changing the lamp

The projector lens is shipped separately.

Changing a lamp

- Unscrew the two captive screws securing the cover for the lamp that needs changing.
- Open the lamp compartment.





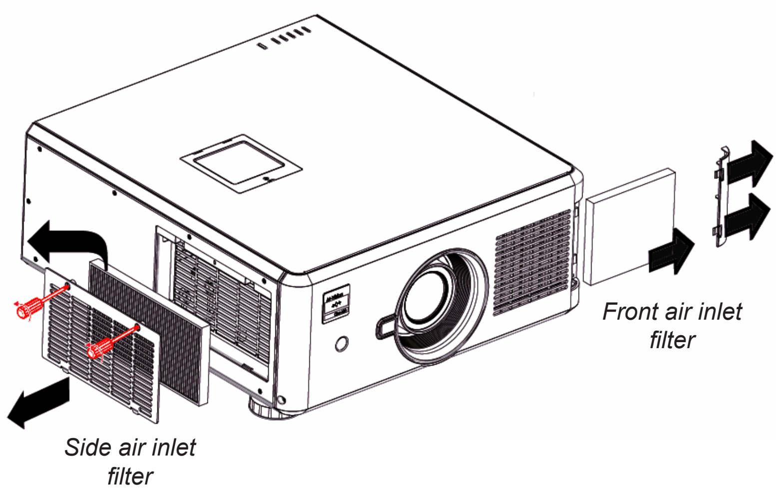
Lamp compartment

- Unscrew the three captive screws securing the lamp module.
- Pull firmly on the handle to remove the lamp module.
- Insert a new lamp module and fasten the screws.
- Replace the lamp compartment cover and fasten the screws.

Changing the filters

- Unscrew the captive screws securing the cover for the side air inlet.
- Replace the filter, making sure that the arrow showing the air flow direction is pointed ***inwards***.
- Replace the cover and fasten the screws.

- Remove the cover for the side air inlet by pushing it firmly to the right, as shown.
- Replace the filter, making sure that the arrow showing the air flow direction is pointed ***inwards***.
- Replace the cover.



Notes

Always allow the lamp to cool for 5 minutes before:

- disconnecting the power
- moving the projector
- changing the lamp

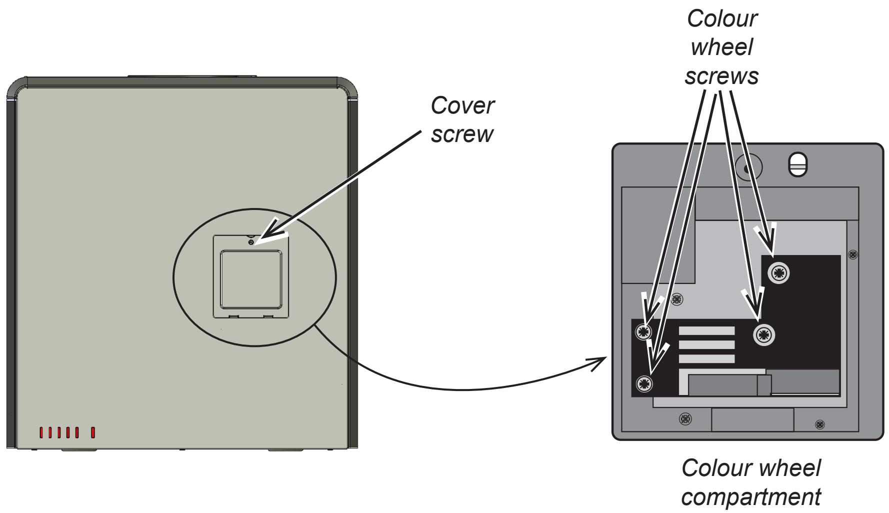
The lamp and colour wheel must be changed only by suitably qualified personnel.

Note that the projector will shut down if any of the covers is opened whilst in operation.

The filters should be changed at the same time as the lamp is changed.

Changing the colour wheel

- Unscrew the captive screw securing the colour wheel compartment cover.
- Open the colour wheel compartment.
- Unscrew the four captive screws securing the colour wheel.
- Remove the colour wheel.
- Insert a new colour wheel and fasten the screws.
- Replace the cover and fasten the screw.



Notes

Always allow the lamp to cool for 5 minutes before:

- disconnecting the power
- moving the projector
- changing the lamp

The lamp and colour wheel must be changed only by suitably qualified personnel.

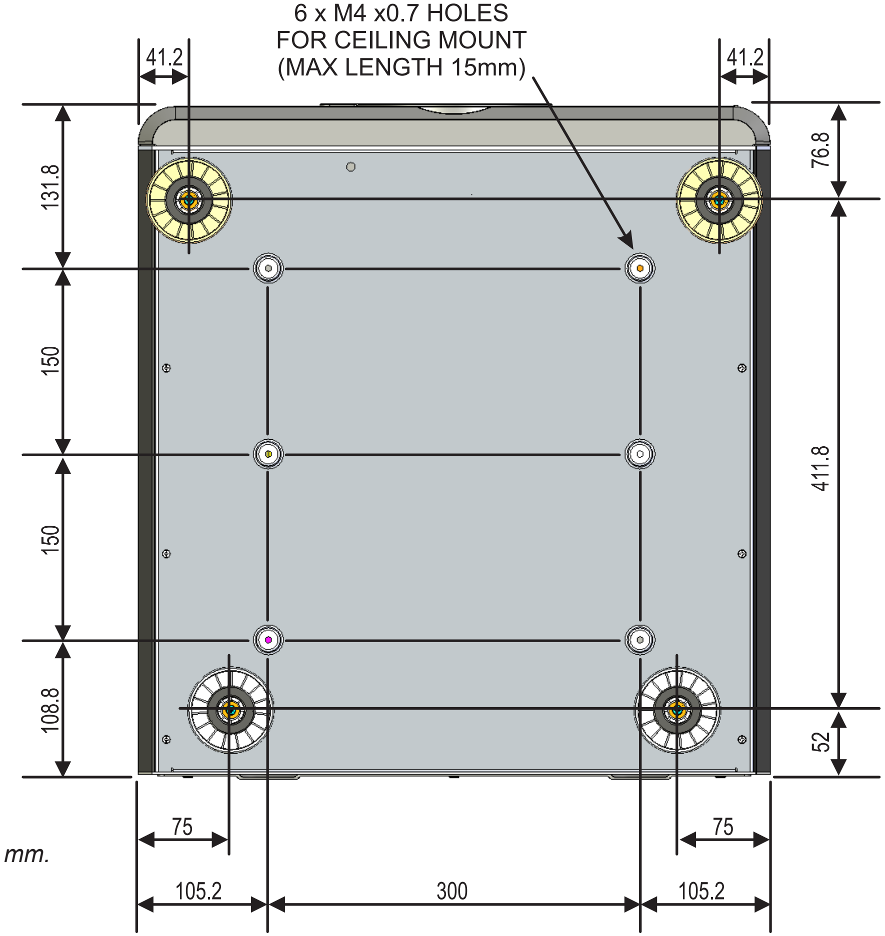
The projector firmware is colour wheel specific, and so will need to be changed at the same time as the wheel.

For assistance, contact your dealer.

Note that the projector will shut down if any of the covers is opened whilst in operation.

Positioning the Screen and Projector

- Install the screen, ensuring that it is in the best position for viewing by your audience.
- Mount the projector, ensuring that it is at a suitable distance from the screen for the image to fill the screen. Set the adjustable feet so that the projector is level, and perpendicular to the screen.
- The dimension drawing below shows the positions of the feet for table mounting, and the fixing holes for ceiling mounting.



All dimensions are in mm.

Notes

Always allow the lamp to cool for 5 minutes before:

- disconnecting the power
- moving the projector

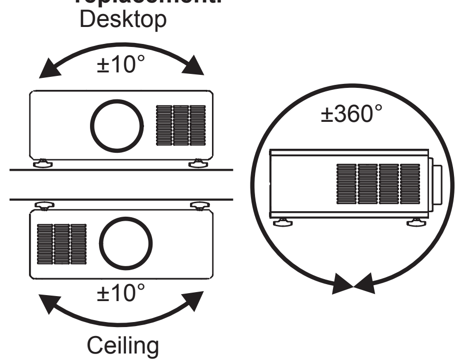
Ensure that there is at least 70cm (28in) of space between the ventilation outlets and any wall, and 50cm (20in) on all other sides.

If ceiling mounting, ensure there is 30cm (12in) of space between the projector and ceiling.

Backup safety chains or wires should always be used with ceiling mount installations.

Do not stack the projectors.

Do not tilt the projector more than ±12° in either direction, in desktop or ceiling mode, when in use, as this may cause serious lamp failure, damage the lamp module and cause extra cost on replacement.



Operating the Projector

Switching the Projector On

- Connect the power cable between the mains supply and the projector. Switch on at the switch next to the power connector.
- Wait until the self-test has completed and the ***Power*** indicator on the projector control panel shows red. The lamp will be off and the projector will be in ***STANDBY*** mode.
- Press **POWER** ⏻ on the control panel or **POWER ON** on the remote control.

  The ***Power*** indicator on the control panel will flash green for a few seconds whilst the lamp comes up to full brightness. When the projector is ready for use, the ***Power*** indicator will show steady green.

Selecting an Input Signal or Test Pattern

Input signal

- Connect an image source to the projector. The signal should be automatically detected by the projector, and should be displayed within a two or three seconds.
- If more than one signal is connected, then select the image you want to display:

  Press **INPUT** repeatedly on the control panel or remote control to cycle through the inputs.

  or use **Input Selection** in the **INPUT menu**.

Test pattern

If you have an image source connected to the projector, then you can display a test pattern instead:

Press **TEST PATTERN** repeatedly on the remote control to cycle through the test patterns,

or select a **Test Pattern** from the **INPUT menu**.

To return to viewing the image from your image source, scroll through the test pattern list to **Off**.

Notes

Always allow the lamp to cool for 5 minutes before:

- disconnecting the power
- moving the projector

For full details of how to connect an image source to the projector, see the ***Connection Guide****.*

For full details of how to use the controls and the menu system, see the ***Operating Guide****.*

If there is no image source connected to the projector, then the Test Pattern feature is NOT available.

Adjusting the Lens

Zoom

- Use the **ZOOM +/–** buttons on the control panel or on the remote control to adjust the lens so that the image fills the screen.

  or use **Lens Control** in the **ALIGNMENT Menu**.

Focus

- Use the **FOCUS +/–** buttons on the control panel or on the remote control to adjust the lens until the image is sharp.

  or use **Lens Control** in the **ALIGNMENT Menu**.

Shift

- Use the **LENS SHIFT** buttons ◁, ▷, △ and ▽ on the control panel to adjust the position of the image,

  or press the **LENS SHIFT** button on the remote control then use ◁, ▷, △ and ▽ to adjust the position of the image.

  or use **Lens Control** in the **ALIGNMENT Menu**.

Adjusting the Image

Orientation

- Use the **Rear Projection** or **Ceiling Mode** settings, in the **ALIGNMENT Menu**.

Aspect Ratio

- Press the **RESIZE** button on the control panel or the **ASPECT** button on the remote control to cycle through all the available settings.

  or use the **Aspect Ratio** setting in the **PICTURE Menu**.

Picture

- Press **PICTURE** on the remote control or use the menu controls, to open the **PICTURE Menu**.

  Use the sliders in the **PICTURE** menu to adjust the brightness, contrast etc.

Notes

☞ *For full details of how to use the controls and the menu system, see the **Operating Guide**.*

Switching the Projector Off

- Press and hold **POWER** ⏻ on the control panel or **POWER OFF** on the remote control for 5 seconds.

  The lamp will go off, and the ***Power*** indicator on the control panel will flash amber for a few seconds whilst the lamp cools. The ***Power*** indicator on the control panel will then show red and the projector will be in ***Standby*** mode.

- Switch off at the switch next to the power connector. Disconnect the power cable from the projector.

Notes

⚠ **Always allow the lamp to cool for 5 minutes before:**

- disconnecting the power
- moving the projector

DIGITAL PROJECTION

CONNECTION GUIDE

E-Vision 8000 Series

High Brightness Digital Video Projector



Rev A   April 2012

CONTENTS

Signal Inputs and Outputs

> **Notes**
>
> *For a complete listing of pin configurations for all signal and control connectors, see **Wiring Details** later in this Guide.*

3G-SDI IN

- Connect a 3G-***SDI*** cable to the left hand SDI BNC.

3G-SDI OUT

- Connect a 3G-***SDI*** cable to the right hand SDI BNC, to distribute the signal to another projector.

HDMI

- Connect a ***HDMI*** cable to the HDMI connector.

DVI-D

- Connect a ***DVI-D*** cable to the DVI connector.

VGA

- If necessary, use the **VGA Setup** controls in the **PICTURE** menu. For more information, see the ***Operating Guide***.
- Set **Color Space** in the **INPUT** menu to **Auto** or **RGB-PC**.

COMPONENT

RGBHV, RGsB or RGBS

- Set **Color Space** in the **INPUT** menu to **Auto** or **RGB-Video**.

YPbPr or YCbCr

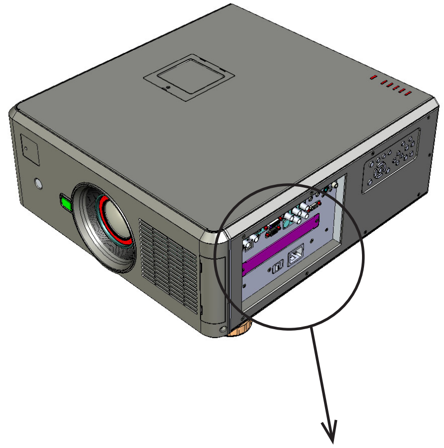
- Set **Color Space** in the **INPUT** menu to **YPbPr** or **YCbCr**.

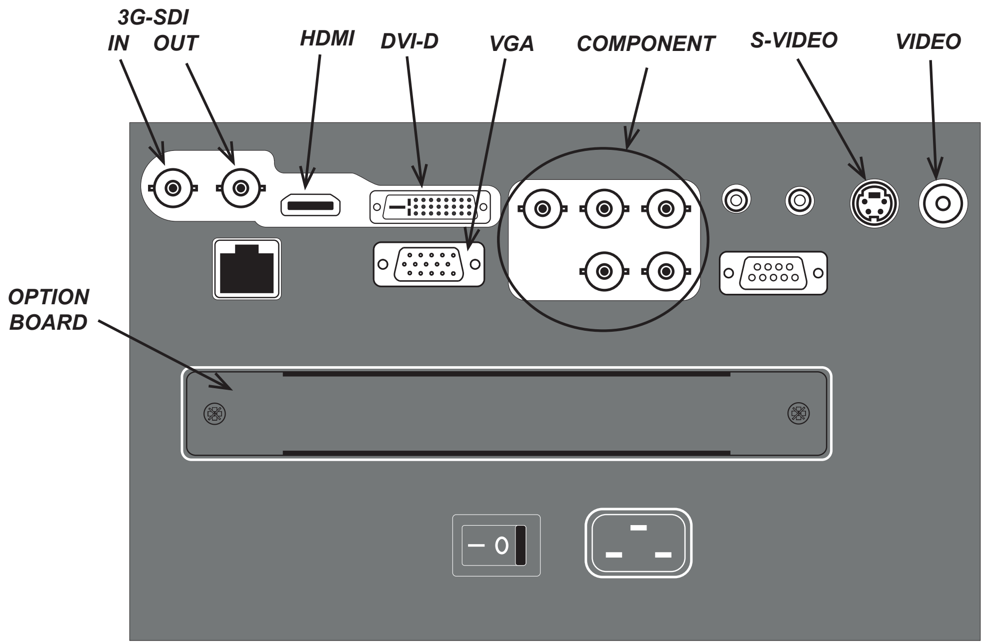
S-Video

- Connect an ***S-Video*** cable to the 4-pin mini-DIN.

Video

- Connect a ***composite video*** cable to the single RCA phono connector.
- Set **Video Standard** in the **INPUT** menu to **Auto**, **PAL**, **SECAM**, or **NTSC**





Supported Signal Input Modes

Signal		Resolution	Refresh Rate (Hz)	Total number of lines	Horizontal Frequency (kHz)	VIDEO	S-VIDEO	COMPONENT	VGA	DVI/HDMI	SDI
SDTV	480i	720 x 480	59.94	525	15.73	✓	✓	✓			✓
	576i	720 x 576	50	625	15.63	✓	✓	✓			✓
HDTV	480p	720 x 480	59.94	525	31.47			✓		✓	
	576p	720 x 576	50	625	31.25			✓		✓	
	720p50	1280 x 720	50	750	37.50			✓		✓	✓
	720p60	1280 x 720	60	750	45.00			✓		✓	✓
	1080p24	1920 x 1080	24	1125	27.00			✓		✓	✓
	1080i50	1920 x 1080	50	1125	28.13			✓		✓	
	1080p25	1920 x 1080	25	1125	28.13			✓		✓	✓
	1080i60	1920 x 1080	60	1125	33.75					✓	
	1080p30	1920 x 1080	30	1125	33.75			✓		✓	✓
	1080p50	1920 x 1080	50	1125	56.24			✓		✓	
	1080p60	1920 x 1080	60	1125	67.48			✓		✓	
COMPUTER	480p	640 x 480	60	525	31.47				✓	✓	
	VGA75	640 x 480	75	500	37.50				✓	✓	
	SVGA60	800 x 600	60	628	37.88	✓			✓	✓	
	XGA60	1024 x 768	60	806	48.36	✓			✓	✓	
	XGA70	1024 x 768	70	806	56.48				✓	✓	
	XGA85	1024 x 768	85	808	68.68				✓	✓	
	WXGA60	1280 x 768	60	798	47.78				✓	✓	
	WXGA+60	1440 x 900	60	934	55.94				✓	✓	
	SXGA60	1280 x 1024	60	1066	63.98				✓	✓	
	SXGA+60	1400 x 1050	60	1089	65.32				✓	✓	
	UXGA60	1600 x 1200	60	1245	75.00				✓	✓	
	VESA 1080p	1920 x 1080	60	1120	67.5				✓	✓	
	WUXGA60	1920 x 1200	60	1235	74.038				✓	✓	

Control Connections

LAN

- All of the projector's features can be controlled via a LAN connection, using the control strings described in the ***Remote Communications Guide***..
- The LAN IP Address of the projector can be set by using the ***LAN IP Configuration Utility***. To see what the Address is set to, you can view the current Network settings in the **CONTROL** Menu.

☞ *For more information about these settings,* see the ***Operating Guide***.

RS232

- The RS232 port can be used to download firmware updates, issued from time to time by Digital Projection.
- All of the projector's features can be controlled via a serial connection, using the control strings described in the ***Remote Communications Guide***.

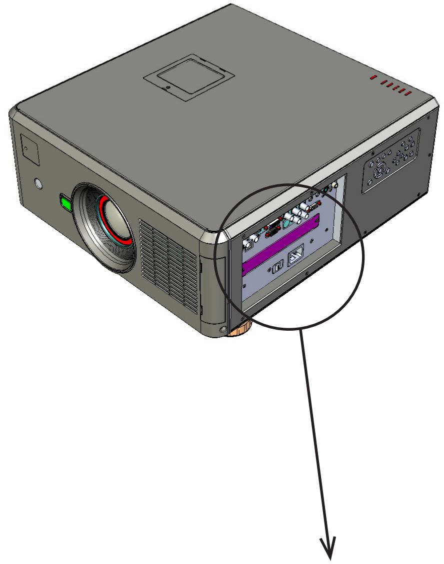
Wired Remote Control

- If infrared signals from the remote control cannot reach the projector due to excessive distance or obstructions such as walls or cabinet doors, you can connect an external IR repeater to the Remote control input, and position its IR sensor within range of the operator.

☞ *Note that plugging in the remote control cable will disable the infra-red.*

Screen Trigger

- The Trigger output can be connected to an electrically operated screen, automatically deploying the screen when the projector is switched on, or activating curtains when the aspect ratio is changed.



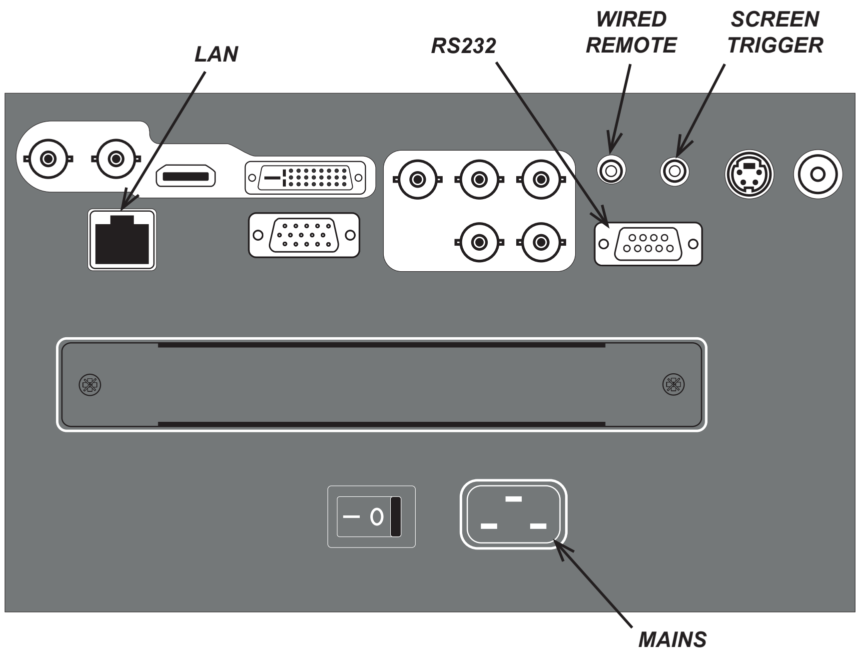
Notes

☞ *For a complete listing of pin configurations for all signal and control connectors, see **Wiring Details** later in this Guide.*

☞ **Eco Network Power** *must be set to* **Standard**, *if you wish to control the projector via the LAN connection.*

☞ *Only one remote connection can be used at any one time as determined by the* **Projector Control** *setting in the* **CONTROL** *menu.*

☞ *For full details of how to use the menu system, see the **Operating Guide**.*

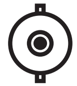


Wiring Details

Signal inputs and outputs

3G-SDI

75 ohm BNC



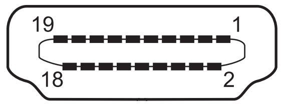
SMPTE 292 / HD-SDI signals are very high speed digital signals which require better quality coaxial cable than conventional analogue video. The data rate is 1.5 Gigabits per second.

In choosing cable length and connectors for any installation the frequency response loss in decibels should be proportional to √f, from 1MHz, to 1.5GHz. The following or similar cable specification should be used to ensure fault free communication between source and projector:

Belden 8281 cable or equivalent

HDMI input

19 way type A connector



pin view of panel connector

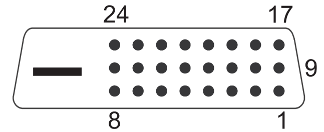
1	TMDS Data 2+
2	TMDS Data 2 Shield
3	TMDS Data 2-
4	TMDS Data 1+
5	TMDS Data 1 Shield
6	TMDS Data 1-
7	TMDS Data 0+
8	TMDS Data 0 Shield
9	TMDS Data 0-
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock-
13	CEC
14	not connected
15	SCL (DDC Clock)
16	SCA (DDC Data)
17	DDC/CEC Ground
18	+5 V Power
19	Hot Plug Detect

Notes

☞ *For full details of all input settings, see the **INPUT menu** in the **Operating Guide**.*

DVI-D

24 way D-type connector



pin view of female connector

1	TMDS Data 2-
2	TMDS Data 2+
3	TMDS Data 2 Shield
4	unused
5	unused
6	DDC Clock
7	DDC Data
8	unused
9	TMDS Data 1-
10	TMDS Data 1+
11	TMDS Data 1 Shield
12	unused
13	unused
14	+5 V Power
15	Ground
16	Hot Plug Detect*
17	TMDS Data 0-
18	TMDS Data 0+
19	TMDS Data 0 Shield
20	unused
21	unused
22	TMDS Clock Shield
23	TMDS Clock+
24	TMDS Clock-

* Hot plug detect (HPD) is fully DVI compliant. DVI sources detect the presence of a display device by providing +5V on pin 14 and looking for +5V on pin 16. Whenever the projector is operational, and 5V is present on pin 14, pin 16 will be held at +5V.

EDID is available even when the projector is switched off.

Operational means that the projector is powered up. Non operational states are powered down and some self test and reprogramming modes.

High Definition Content Protection (HDCP) is supported on this input.

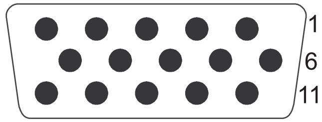
Notes

For full details of all input settings, see the ***INPUT menu*** *in the* ***Operating Guide****.*

VGA

15 way D-type connector

1	R
2	G
3	B
4	unused
5	Digital Ground (H Sync)
6	R Ground
7	B Ground
8	G Ground
9	+5v
10	Digital Ground (V Sync/DDC)
11	unused
12	SDA
13	H Sync
14	V Sync
15	SCL

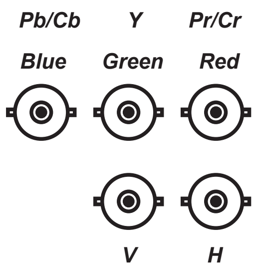


pin view of female connector

COMPONENT

5 x 75 ohm BNC

RGBHV	RGsB	YPbPr	YCbCr
Green	Green + Sync	Y	Y
Blue	Blue	Pb	Cb
Red	Red	Pr	Cr
Hsync			
Vsync			



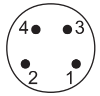
Notes

☞ *For full details of all input settings, see the* **INPUT** ***menu*** *in the* ***Operating Guide****.*

S-Video input

4 pin mini-DIN

1	Y Ground
2	C Ground
3	Luminance (Y)
4	Chrominance (C)



pin view of female connector

Video input

1 x RCA Phono

Composite Video



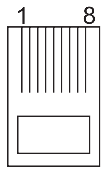
Notes

☞ *For full details of all input settings, see the* **INPUT** ***menu*** *in the* ***Operating Guide****.*

Control connections

LAN connection

TCP Port number
7000



top view of cable connector (clip is underneath)

10BaseT Unshielded Twisted Pair cable

The standard wire colours are as follows:

1	White / Orange stripe
2	Orange
3	White / Green stripe
4	Blue
5	White / Blue stripe
6	Green
7	White / Brown stripe
8	Brown

Crossed cable

(used to connect directly to a computer with no hub or network.)
(Note that only the green and orange pairs are crossed)

1	White / Orange stripe	White / Green stripe	1
2	Orange	Green	2
3	White / Green stripe	White / Orange stripe	3
4	Blue	Blue	4
5	White / Blue stripe	White / Blue stripe	5
6	Green	Orange	6
7	White / Brown stripe	White / Brown stripe	7
8	Brown	Brown	8

Notes

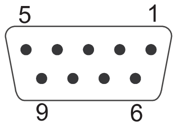
☞ *For full details of all control settings, see the* **CONTROL** ***menu*** *in the* ***Operating Guide****.*

☞ *Use:*

a straight cable to connect to a hub or network, or

a crossed cable as shown here to connect ONLY to a computer directly.

RS232 Serial control input



pin view of female connector

1	unused
2	Received Data (RX)
3	Transmitted Data (TX)
4	unused
5	Signal Ground
6	unused
7	unused
8	unused
9	unused

Null-modem cable

(used to connect the projector to a computer)

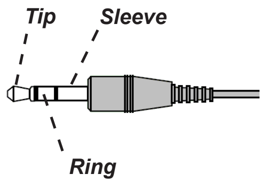
RX	2	---	3	TX
TX	3	---	2	RX
GND	5	---	5	GND

Serial port settings

Baud rate	38,400 bps
Data length	8 bits
Stop bits	one
Parity	none
Flow control	none

Wired Remote control connection

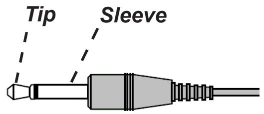
3.5mm mini jack



Tip	Power
Ring	Signal
Sleeve	Ground

Screen Trigger output

3.5mm mini jack



Tip	Signal
Sleeve	Ground

Notes

For full details of all control settings, see the **CONTROL** ***menu*** *in the* ***Operating Guide****.*

The projector is a DTE, so use:

a straight cable to connect to a modem, or

a null-modem cable as shown here to connect to another DTE such as a computer.

Note that plugging in the remote control cable will disable the infra-red.

DIGITAL PROJECTION

OPERATING GUIDE

E-Vision 8000 Series

High Brightness Digital Video Projector

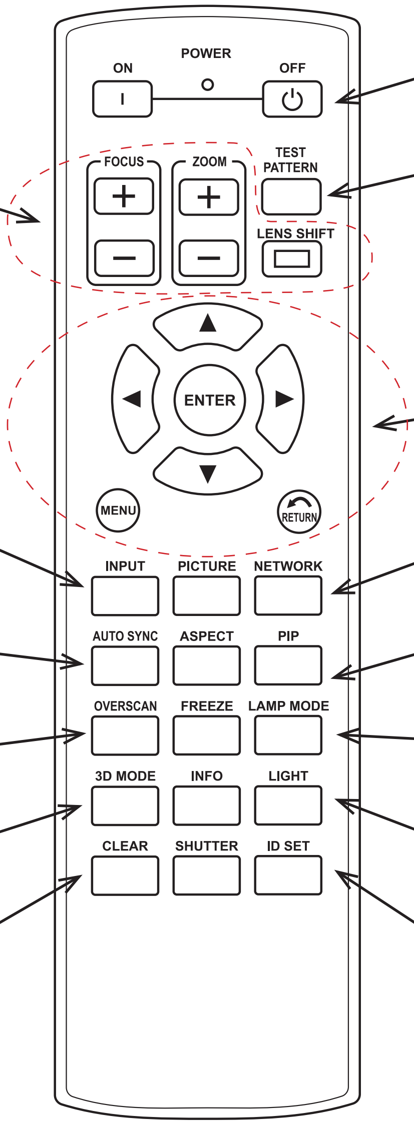


Rev A   April 2012

CONTENTS

continued

Using the Remote Control



POWER controls

LENS controls

TEST PATTERN: *select from a list of available test patterns*

MENU controls

INPUT: *select from the available video input signals*

PICTURE: *opens the Picture menu*

NETWORK: *has no function on this projector*

AUTO SYNC: *Projector will re-synchronise with the current input signal*

ASPECT: *select from a list of available aspect ratios*

PIP: *switches the PIP image on or off*

OVERSCAN: *select from Off Crop or Zoom*

FREEZE: *freeze the current image frame*

LAMP MODE: *has no function on this projectorl*

3D MODE: *has no function on this projector*

INFO: *opens the Service menu*

LIGHT: *illuminates the buttons on the remote control for 10 seconds*

CLEAR: *has no function on this projector*

SHUTTER: *opens or closes the shutter*

ID SET: *has no function on this projector*

Notes

Some options and controls may not be available due to settings in the menus.

For full details of how to use the menu system, see later in this guide.

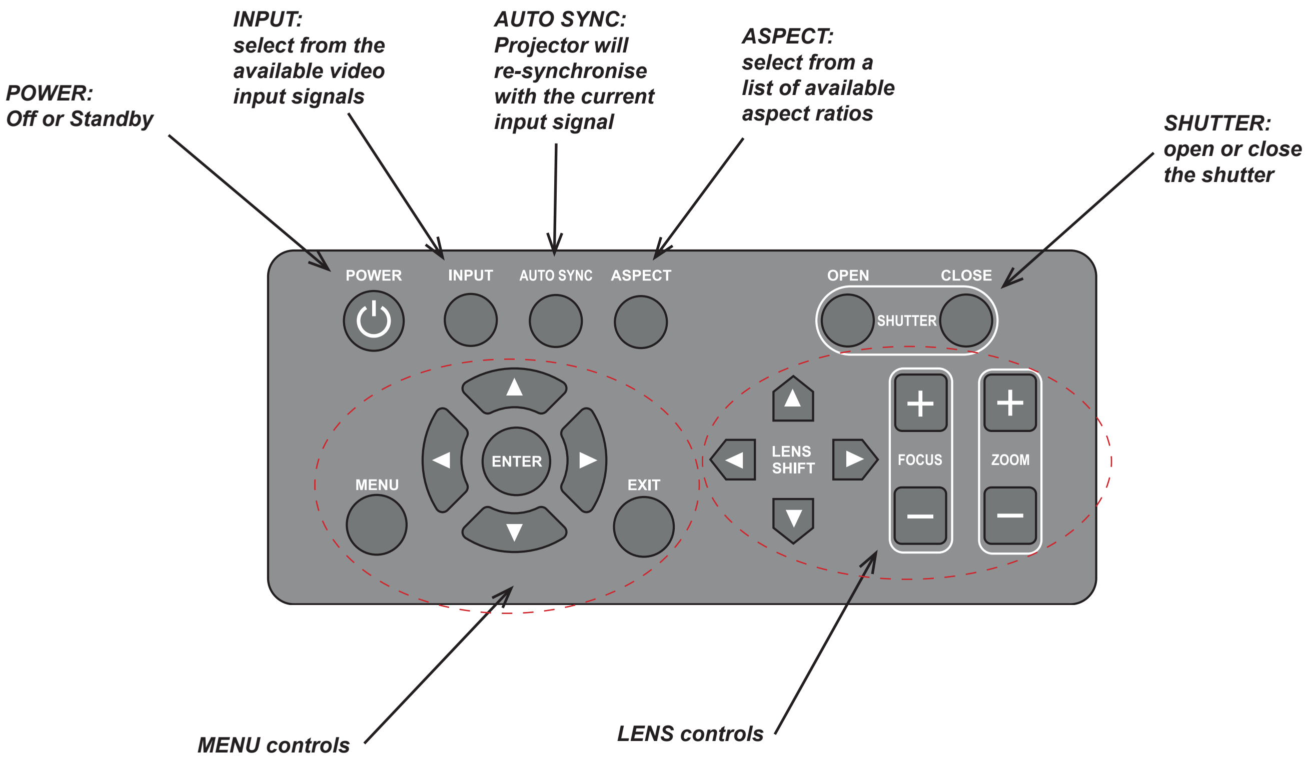
Test Pattern

- Press **ENTER** to display a Test Pattern.
- Use ◁ or ▷ to scroll through the following Test Patterns:

  ... Off, **Colour Bars**, **Alignment Grid**, **Burst**, **Red**, **Green**, **Blue**, **White**, **Black**, **Corrected Red**, **Corrected Green**, **Corrected Blue**, **Greyscale**, **Off ...**
- To return to viewing the image from your image source, use ◁ or ▷ to scroll through the list to **Off**.

*To protect the lamps from thermal shock, it will not be possible to change the **Lamp Mode** more than once within five minutes.*

Using the Control Panel



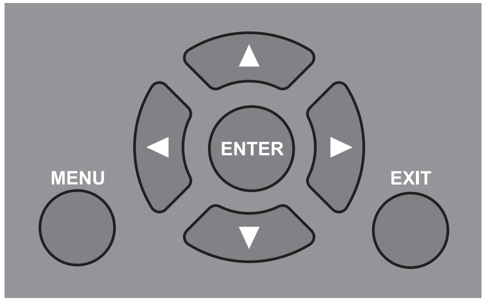
Notes

- *Some options and controls may not be available due to settings in the menus.*
- *For full details of how to use the menu system, see later in this guide.*

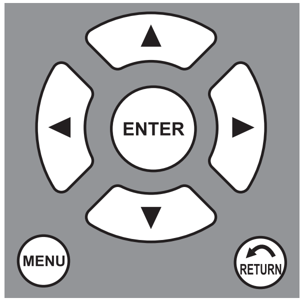
Using the Menus

Use the buttons on the projector control panel or on the remote control, to access the menu system.

- To open the on-screen display (OSD), press **MENU**. To close, press **EXIT/ RETURN**.



Projector control panel



Remote control

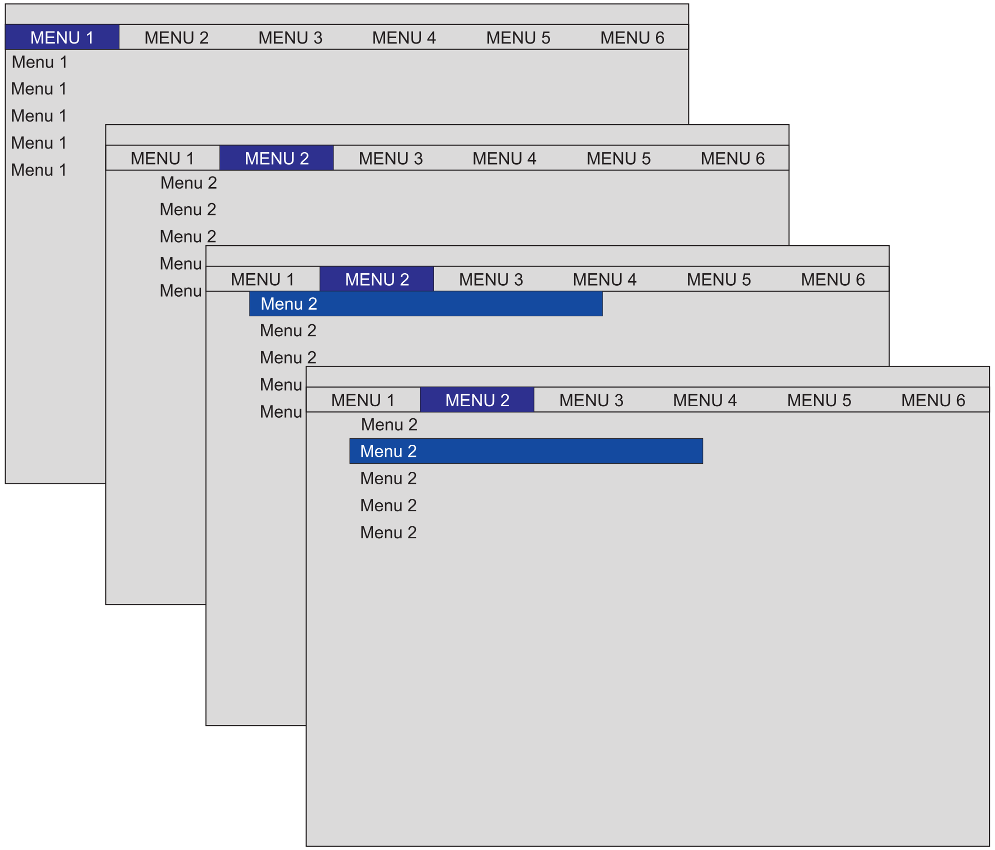
Navigating the menus

- Select a menu using ◁ and ▷,
- then open the menu by pressing ▽.

  The first item in the menu is highlighted.

- Select an item in the menu using △ and ▽.

- To open another menu, first close the current menu by pressing **MENU**.



Notes

Some menu options and controls may not be available due to settings in other menus. These will be shaded grey on the actual menu.

Sub Menus

- Select a sub menu using

  △ and ▽.

- then open the Sub Menu by pressing **ENTER**.

  The Sub Menu appears ***to either the left or right side of*** the menu it was called from, depending on the space available.

  The name of the Sub Menu is shown at the top.

- To close the Sub Menu, press **MENU**.

Sometimes, a Sub Menu leads to a Sub Submenu:

- Select the Sub Submenu using

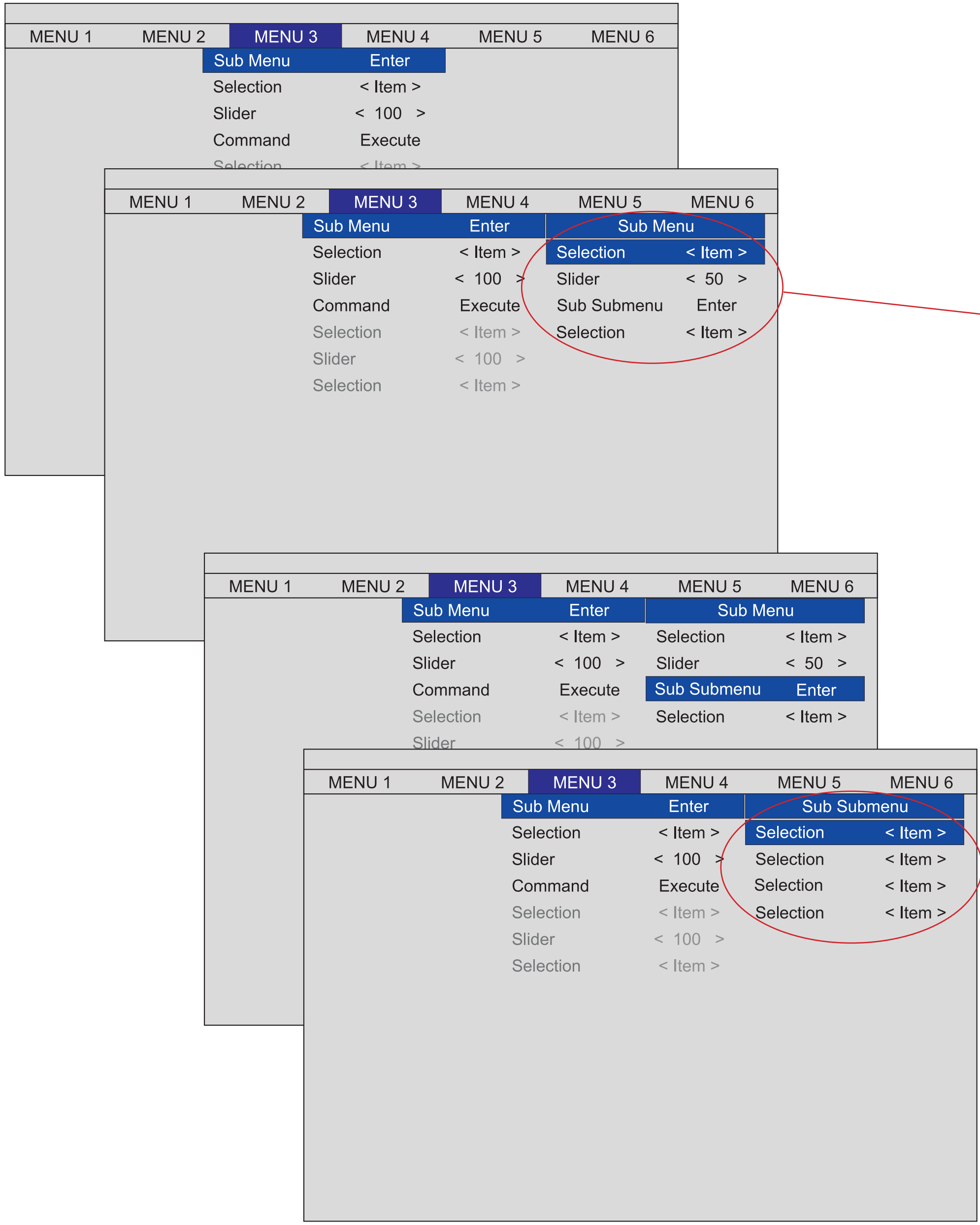
  △ and ▽.

- then open it by pressing **ENTER**.

  The Sub Submenu appears ***in place of*** the sub menu it was called from.

  The name of the Sub Submenu is shown at the top.

- To close the Sub Submenu, press **MENU**.



Notes

☞ *Some menu options and controls may not be available due to settings in other menus. These will be shaded grey on the actual menu.*

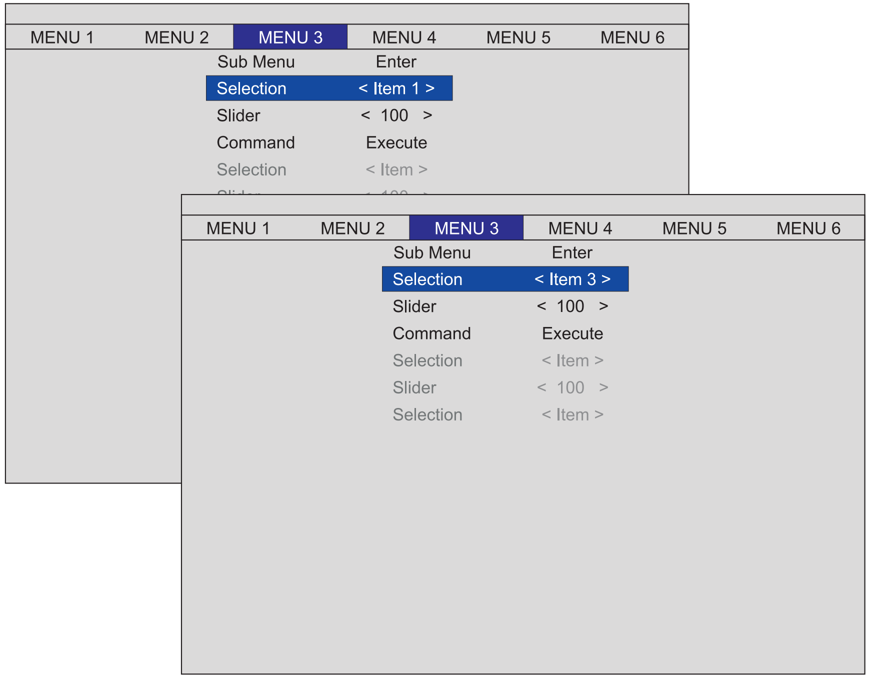
☞ *The Sub Menu appears **to either the left or right side of** the menu it was called from, depending on the space available.*

☞ *The Sub Submenu appears **in place of** the sub menu it was called from.*

Selecting parameters

Most parameters are changed by selecting from a list:

- Select from the list using ◁ and ▷.
- The change will usually be made immediately.



Some parameters are changed by selecting from a sub menu.

- Press **ENTER** to open the menu.

  The sub menu appears ***to the left or right side, or in place of*** the menu it was called from, depending on the space available.
- The item that is currently selected is marked with a block: ■.
- Select from the sub menu using △ and ▽.
- The change will be made when you press **ENTER** to confirm the selection.



Notes

Some menu options and controls may not be available due to settings in other menus. These will be shaded grey on the actual menu.

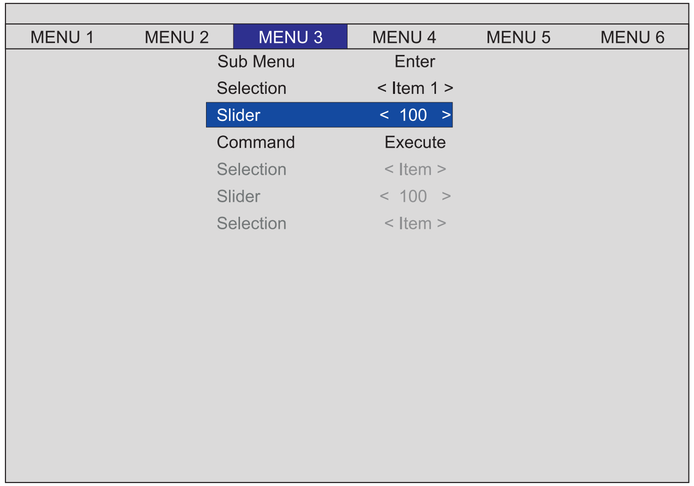
There may be a short delay when changing some parameters, due to internal processing time.

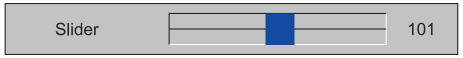
*The sub menu appears **to the left or right side, or in place of** the menu it was called from, depending on the space available.*

Sliders

- Use ◁ or ▷ to adjust the value.

  The menu will disappear, to be replaced by a slider bar.
- To return to the menu, press **MENU**.

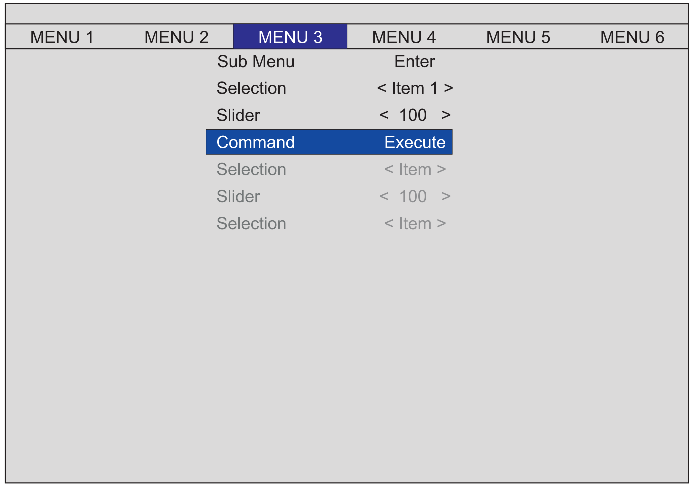


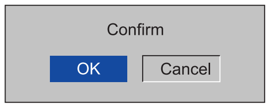


Commands

- To execute the command, press **ENTER**.

  In this example,
- use ◁ or ▷ to move the **blue** highlight to **OK** or **Cancel**,
- then press **ENTER** to confirm your selection.





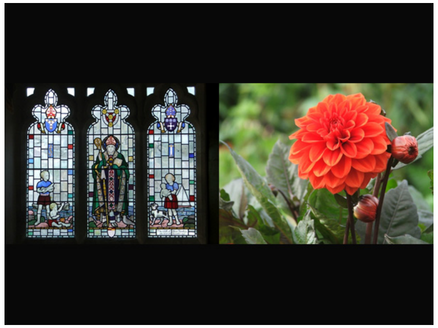
Notes

Some menu options and controls may not be available due to settings in other menus. These will be shaded grey on the actual menu.

A Tour of the Menus

INPUT Menu

INPUT	PICTURE	LAMPS	ALIGNMENT	CONTROL	SERVICE
Input Selection	Enter				
PIP	Enter				
Test Pattern	Enter				
Color Space	< Auto >				
Input Lock	< Auto >				
Background	< Logo >				
Video Standard	< Auto >				
Auto Sync Adjust	< Always >				



PIP (split L-R)



PIP (top left)

Input Selection

- Press **ENTER** to open the Input Selection menu, then select an input from the list.

PIP (Picture in Picture) sub menu

- Press **ENTER** to open the PIP sub menu.

PIP Option

- Set **PIP Option** to **On** or **Off**.

Main and PIP Inputs

- Select a **Main Input** from the drop-down list. The inputs are divided into two groups – the main image must be from one group, and the sub-image must be from the other group.
  - Group A: **VGA, Component/BNC, Composite, S-Video**
  - Group B: **HDMI, DVI, 3G-SDI**
- Select a **PIP Input** from the drop-down list.

Position

- Select a **Position** or **Split L-R** for the PIP image.

INPUT	PICTURE	LAMPS	ALIGNMENT	CONTROL	SERVICE
PIP Option	< On >				
Main Input	Enter				
PIP Input	Enter				
Position	< Top Left >				

Notes

☞ *See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

☞ *In this example, the flower is the main image, and the window is the sub-image.*

☞ *The two images MUST be from different **Input groups**.*

Input Menu
PIP Submenu

INPUT Menu *continued*

Test Pattern

- Press **ENTER** to display a Test Pattern.
- Use ◁ or ▷ to scroll through the following Test Patterns:

  ... Off, **Colour Bars**, **Alignment Grid**, **Burst**, **Red**, **Green**, **Blue**, **White**, **Black**, **Corrected Red**, **Corrected Green**, **Corrected Blue**, **Greyscale**, **Off ...**
- To return to viewing the image from your image source, use ◁ or ▷ to scroll through the list to **Off**.

Color Space

- Set this to **Auto**, except when the projector has problems selecting between **YCrCb**, **YPrPb**, **RGB-PC** and **RGB-Video**.

Input Lock

- Set this to **Auto**, except when the projector has problems locking on to **48Hz**, **50Hz** and **60Hz** signals.

Background

- Set this to determine what appears on screen when the projector is searching for a valid input source.

Video Standard

- Set this to **Auto**, unless the projector has problems selecting between **PAL**, **SECAM** and **NTSC**.

Auto Sync Adjust

- Select from
  - **Off**: Auto Sync Adjustment is never performed.
  - **Auto** – Projector will compare with the previous five signals stored in memory, and then recall those settings if possible.
  - **Always** - Projector will perform auto setup every time a new signal source is connected, ignoring any settings in memory.

Notes

☞ *See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

PICTURE Menu

INPUT	PICTURE	LAMPS	ALIGNMENT	CONTROL	SERVICE

Display Mode	<	Video	>
Contrast	<	100	>
Dynamic Contrast	<	Off	>
Brightness	<	100	>
Saturation	<	100	>
Hue	<	100	>
Gamma	<	Video	>
Color		Enter	
Sharpness	<	2	>
Noise Reduction	<	2	>
Aspect Ratio	<	Letterbox	>
Overscan	<	Off	>
VGA Setup		Enter	
Auto Sync		Execute	

Display Mode

- Select one of the Display modes as required.

Contrast, Brightness, Saturation, Hue

- Adjust the sliders for these settings, as required.

Dynamic Contrast

- Set this to **On** or **Off** as required.

Gamma

- Select one of the Gamma settings as required.

Notes

*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

PICTURE Menu *continued*

Color sub menu

- Press **ENTER** to open the Color sub menu.

Colour Temperature

- Set this to suit the specification of the input source, or to improve the appearance of the projected image.

Trim

- Set the **Red**, **Green** and **Blue Lift** and **Gain** settings, to improve the appearance of the projected image.

Sharpness, Noise Reduction

- Adjust the sliders for these settings, as required.

Aspect Ratio

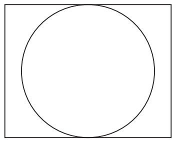
- Set **Aspect Ratio** to suit the incoming video signal.

  The **5:4**, **4:3**, **16:10**, **16:9**, **1.88:1** and **2.35:1** settings will stretch the image to the selected aspect ratio, leaving black bars at the top and bottom or sides of the screen, depending on the aspect ratio of the projector.

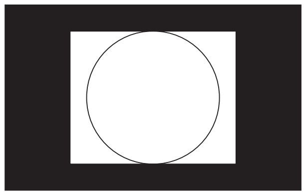
  The **Letterbox** setting can be used where a wide screen image has been supplied in a narrower format with black bars at the top and bottom. The top and bottom of the image will be cropped,and the image stretched to fill the screen.

  The **Native** setting will scale the image to fit either the full height or width of the screen, whilst retaining the aspect ratio of the image.

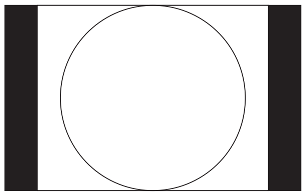
  The **Unscaled** setting will display the image pixel for pixel at its supplied resolution, in the centre of the screen. There may be black bars at the top and bottom or sides of the screen, or the image may be cropped, depending on the video signal and the aspect ratio of the projector.



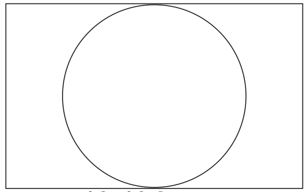
5:4 image



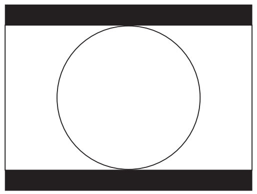
displayed unscaled



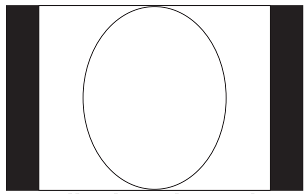
displayed at native



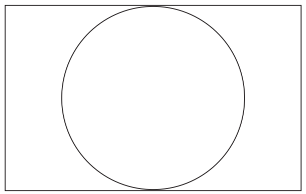
16:10 image



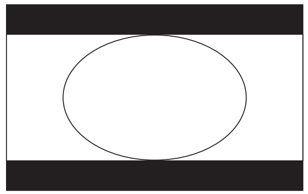
letterbox image



displayed at 5:4



stretched and cropped



displayed at 2.35:1

Notes

*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

*The full height and width of the screen will depend on the projector model. For more information, see the **Specification leaflet**, or the **Important Information**.*

PICTURE Menu *continued*

Overscan

- Set this to **Off On** or **Zoom** as required.

VGA Setup sub menu

- Press **ENTER** to open the VGA Setup sub menu.

Horizontal Total, Start and Phase, Vertical Start

- Adjust the sliders for these settings, as required to suit the incoming image.

Auto Sync

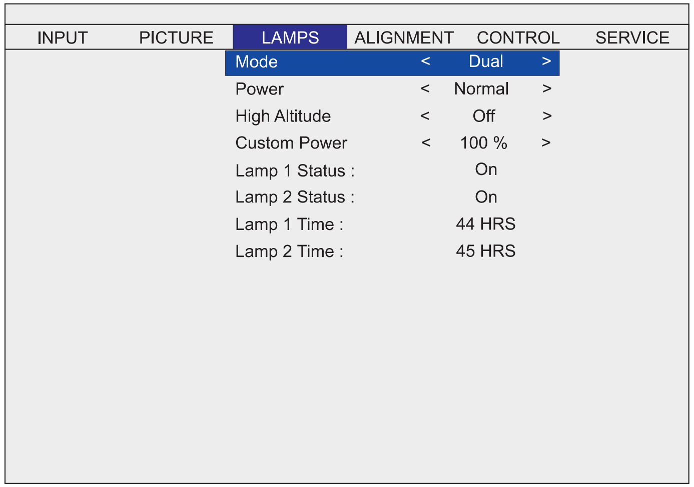
- Press **ENTER** to force the projector to re-synchronise with the input signal.

Notes

*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

Overscan is used to compensate for noisy or badly defined image edges, by cropping the image, or increasing the size of the image to force the edges off-screen.

LAMPS Menu



Mode

- Set this to **Single** or **Dual** as required.

  When the mode is changed, it will not be possible to change it again within five minutes.

Power

- Set this to **Normal** for 100% power, **Eco** for 80% power or **Custom** to enable the Custom Power slider.

High Altitude Mode

- Set this to **On** if it is necessary to have the cooling fans running at high speed.

Custom Power

- Set the slider as required.

Lamp Status and Time

- For information only.

Notes

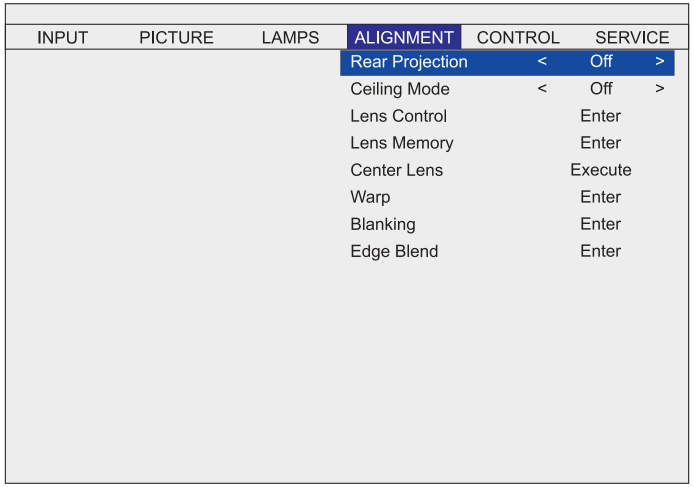
*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

*When **Lamp Mode** is set to **Single**, the projector will turn on using the lamp with the least hours of use.*

*To protect the lamps from thermal shock, it will not be possible to change the **Lamp Mode** more than once within five minutes.*

*The **Power** setting should be set to **Custom**, if you want to use the **Custom Power** slider.*

ALIGNMENT Menu



Rear Projection

- Set this to **Off** or **On** as required.

Ceiling Mode

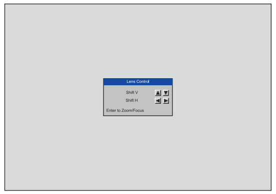
- Set this to **Off** or **On** as required.

Notes

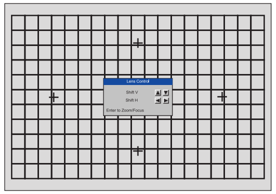
*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

Lens Control

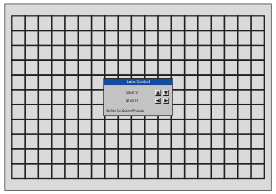
- Press **ENTER** to display the Lens Control box.
- Press **ENTER** again to scroll through the following combinations of lens control and background pattern:



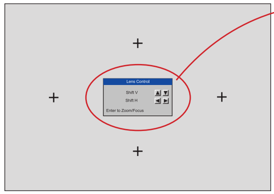
Shift with no pattern



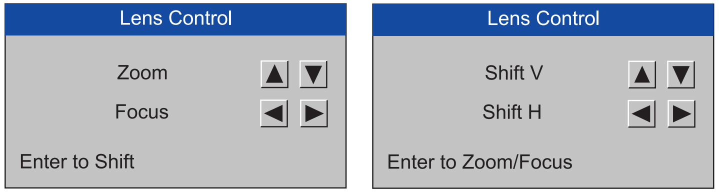
Zoom/Focus with grid and crosses



Shift with grid



Zoom/Focus with crosses



- Use ◁, ▷, △ and ▽ to **Shift** the lens or to adjust the **Zoom** and **Focus**, as applicable

ALIGNMENT Menu *continued*

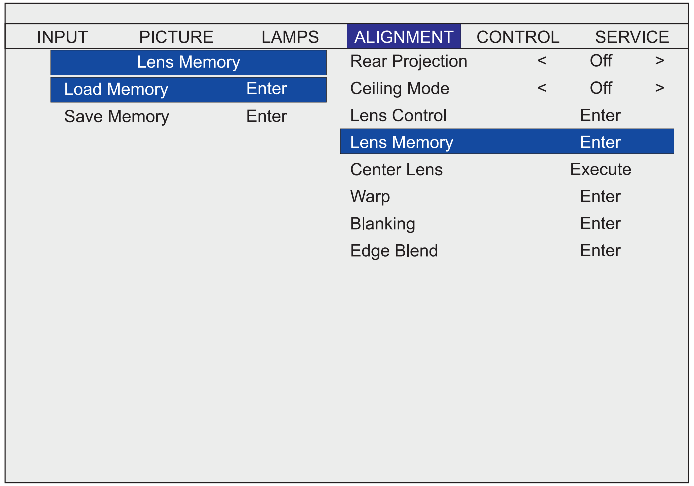
Center Lens

- Press **ENTER** to **Center** the **Lens**.

Lens Memory sub menu

The current lens position, focus and zoom settings can be saved in one of ten memories, for later recall.

- Press **ENTER** to open the Lens Memory sub menu.



Save Memory

- Press **ENTER** to open the Save Memory sub sub menu.
- Use △ and ▽ to select from **Lens Memory 1** to **Lens Memory 10**.
- Press **ENTER** to save the current settings.

Load Memory

- Press **ENTER** to open the Load Memory sub sub menu.
- Use △ and ▽ to select from **Lens Memory 1** to **Lens Memory 10**.
- Press **ENTER** to recall the saved settings.

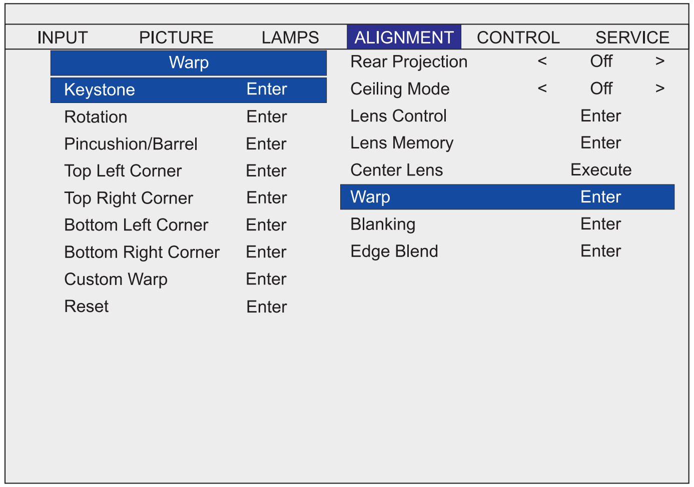
Notes

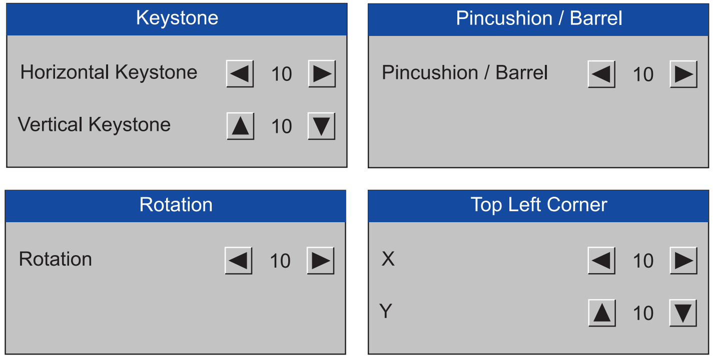
*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

ALIGNMENT Menu *continued*

Warp sub menu

- Press **ENTER** to open the Warp sub menu.





Warp control boxes

Keystone, Rotation, Pincushion/Barrel, Corner

- Use △ and ▽ to select one of the warp controls.
- Press **ENTER** to open the warp control box:
  - Use the **Keystone** control to correct for any distortion caused by the projector being in a different horizontal or vertical plane to the screen..
  - Use the **Rotation** control to rotate the image up to 5° clockwise or anti-clockwise.
  - Use the **Pincushion/Barrel** control to correct for any distortion caused by the screen being concave or convex.
  - Use the four **Corner** controls to stretch the image from each of the four corners..
  - Use **Custom Warp** to activate a user-defined warp pattern.

Reset

- Press **ENTER** to reset all warp settings to zero.

Notes

*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

Only one of the Warp controls, or the Blanking control can be used at any one time.

Exception: all four Corner controls can be used at the same time.

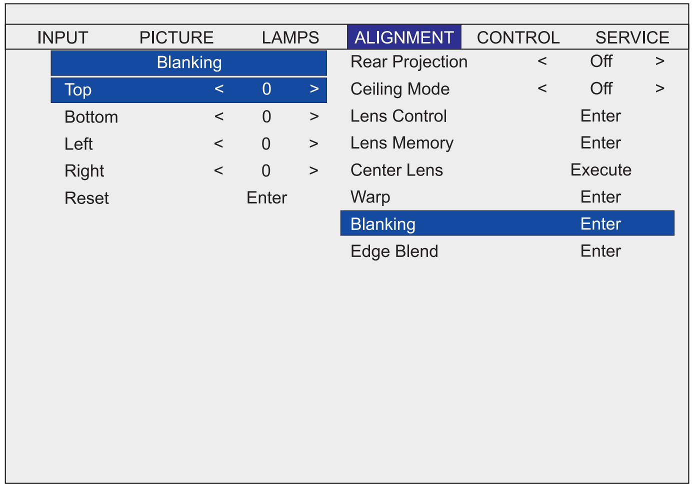
If the Edge Blend feature is in use, then only the four Corner controls can be used.

*If you are not sure which Warp control is in use, then select **Reset**, from the **Warp** menu to reset all controls to zero.*

ALIGNMENT Menu *continued*

Blanking sub menu

- Press **ENTER** to open the Blanking sub menu.



Top, Bottom, Left and Right

- Set each slider as required.

Reset

- Press **ENTER** to reset all blanking settings to zero.

Notes

*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

Only one of the Warp controls, or the Blanking control can be used at any one time.

Exception: all four Corner controls can be used at the same time.

If the Edge Blend feature is in use, then only the four Corner controls can be used.

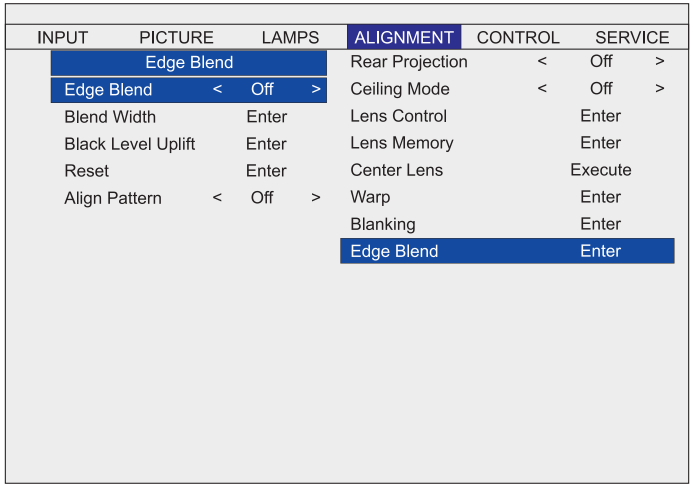
*If you are not sure which Warp control is in use, then select **Reset**, from the **Warp** menu to reset all controls to zero.*

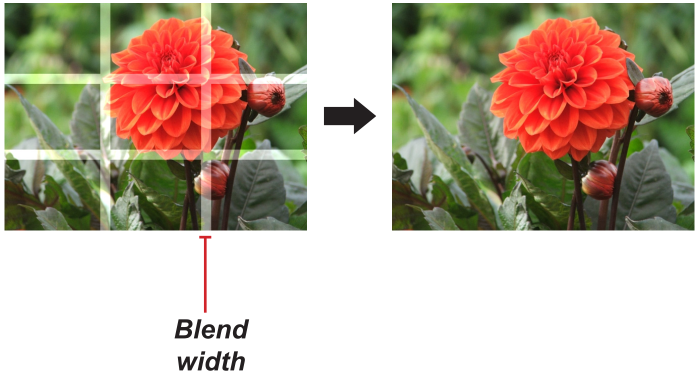
ALIGNMENT Menu *continued*

Edge Blend sub menu

When several projectors are used to create a large tiled image, the edges need to be blended to avoid the overlaps appearing brighter than the rest of the image..

- Press **ENTER** to open the Edge Blend sub menu.





Edge Blend

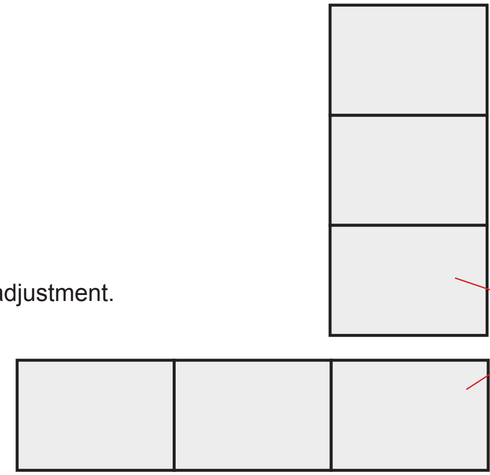
- Set this to **Off** or **On** as required.

Blend Width

- Press **ENTER** to open the Blend Width sub sub menu.
- Set the **Width** sliders to the blend width required for each edge to be blended.

Black Level Uplift

- Press **ENTER** to open the Black Level Uplift sub sub menu.
- Set the **Area** sliders to correct for stray light from the DMD's non-addressable border.
- Set the **All** sliders for the amount of uplift required; the **Colour** sliders can be used for fine adjustment.



Reset

- Press **ENTER** to reset all edge blend settings to zero.

Align Pattern

- Set this to **Off** or **On** as required.

Notes

*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

Only one of the Warp controls, or the Blanking control can be used at any one time.

Exception: all four Corner controls can be used at the same time.

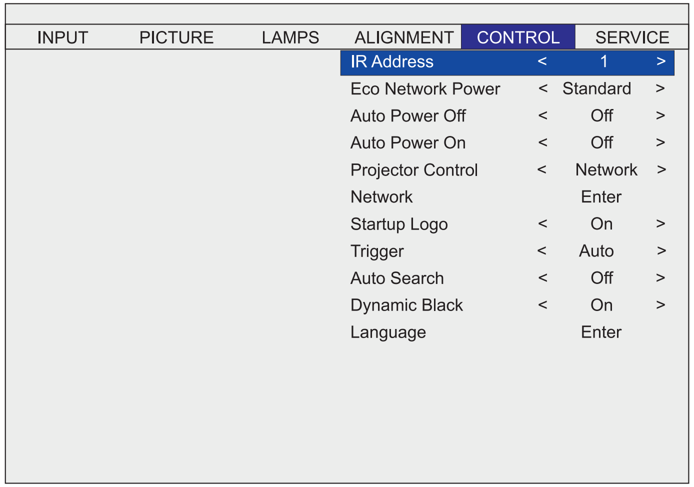
If the Edge Blend feature is in use, then only the four Corner controls can be used.

Black Level Uplift is available for up to two edges only, and they must be top+bottom, or left+right – not top+left for example.

Therefore, uplift can only be used for an array of projectors either:

1 projector high or
1 projector wide

CONTROL menu



IR Address

- Set this to **1** or **2** as required.

Eco Network Power

- Set this to **Standard** or **Eco** as required. In Eco mode, the LAN power supply is switched off.

Auto Power Off

- Set this to **On**, if you want the projector to go into **Standby mode** when no input source is detected for 20 minutes.

Auto Power On

- Set this to **On**, if you want the projector to start up immediately when the mains is connected.
- Set this to **Off**, if you want the projector to go into **Standby mode** when the mains is connected. In this case, the projector will not start up until the **POWER** button is pressed on the control panel or the remote control.

Notes

*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

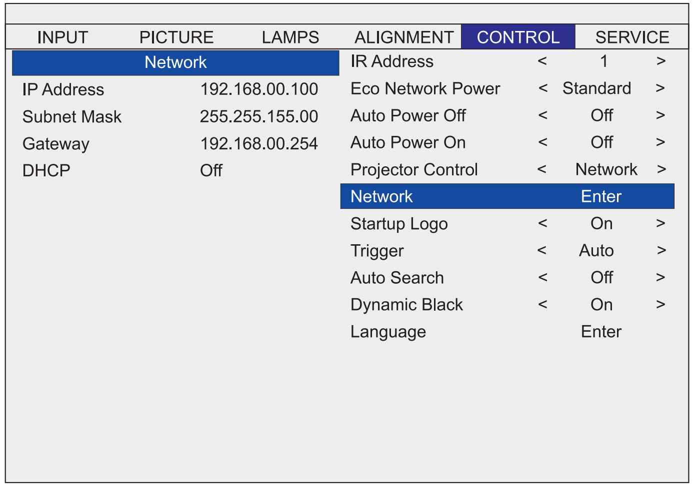
Eco Network Power *must be set to* **Standard**, *if you wish to control the projector via the LAN connection.*

CONTROL Menu *continued*

Projector Control

- Set this to **Network** or **RS232** as required.

Network sub menu



- Press **ENTER** to open the Network sub sub menu.

  The settings here are for information only.

Notes

See also ***Using the Menus****, earlier in this guide and* ***Menu Map****, later in this guide.*

Eco Network Power *must be set to* **Standard***, if you wish to control the projector via the LAN connection.*

To change any of the network settings, use the embedded ***LAN IP Configuration Utility*** *(see later in this guide).*

CONTROL Menu *continued*

Startup Logo

- Set this to **On** if you want the DP logo to show when the projector is first switched on.

Trigger

- Set this to **Auto** if you want the **Trigger** output to be activated when the projector is first switched on.
- Set this to one of the **Aspect Ratio** settings, if you want the **Trigger** output to be activated when the projector is switched to that aspect ratio.

Auto Search

- When this is set to **On**, the projector will search for an alternative input source when the current input source is disconnected
- When this is set to **Off**, the projector will show the DP logo when the current input source is disconnected.

Dynamic Black

- Set this to **On** or **Off** as required.

Language

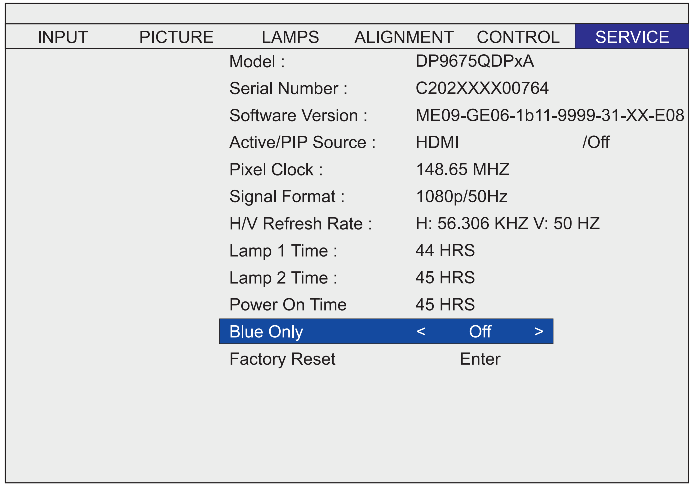
- Press **ENTER** to open the Language Selection menu, then select an language from the list.

Notes

☞ *See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

☞ *Dynamic Black reduces the overall light output for images that contain a lot of black. This improves the perceived contrast ratio.*

SERVICE menu



Information

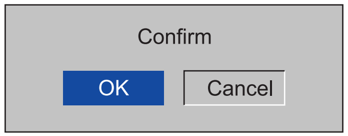
- The first part of the menu is for information only.

Blue Only

- Set this to **On** or **Off** as required.

Factory Reset

- Projector will ask for confirmation before restoring all settings to factory defaults.
- When the confirmation box appears, use ◁ or ▷ to move the blue highlight to **OK** or **Cancel**, then press **ENTER** to confirm your selection.



Notes

*See also **Using the Menus**, earlier in this guide and **Menu Map**, later in this guide.*

Do NOT do this unless you are sure that you want to restore ALL settings to their factory defaults.

Menu Map

Menu	*Sub Menus and Controls*
INPUT	
	Input Selection *HDMI, DVI, VGA, Component/BNC, Composite, S-Video, 3G-SDI, Option Board*
	PIP
	PIP Option *Off, On*
	Main Input *Select from group A or group B*
	PIP Input *Select from group B or group A*
	Position *Top Left, Top Right, Bottom Left, Bottom Right, Split L-R*
	Test Pattern *Off, Colour Bars, Alignment Grid, Vertical Lines, R, G, B, White, Black, Corrected R, G, B, Greyscale*
	Color Space *Auto, YCbCr, YPbPr, RGB-PC, RGB-Video*
	Input Lock *Auto, 48Hz, 50Hz, 60Hz*
	Background *Logo, Blue, Black, White*
	Video Standard *Auto, PAL, SECAM, NTSC*
	Auto Sync Adjust *Always, Off, Auto*
PICTURE	
	Display Mode *Video, High Bright, Presentation*
	Contrast
	Dynamic Contrast *Off, On*
	Brightness
	Saturation
	Hue
	Gamma *Video, Linear, Film, Graphics*
	Color
	Color Temperature *Native, 5000K-9300K*
	Trim *RGB Lift and Gain*
	Sharpness
	Noise Reduction
	Aspect Ratio *5:4, 4:3, 16:10, 16:9, 1.88, 2.35, Letterbox, Native, Unscaled*
	Overscan *Off, Crop, Zoom*
	VGA Setup *H Total, H Start, H Phase, V Start*
	Auto Sync *Press* **ENTER** *to execute*

Notes

☞ *Some of the information in this menu map is summarised. See the actual menu on the projector for full detail.*

☞ *Some menu options and controls may not be available due to settings in other menus. These will be shaded grey on the actual menu.*

☞ *Where it would be helpful, some menu options are described in more detail earlier in this operating guide.*

Menu	*Sub Menus and Controls*

LAMPS

Mode *Dual, Single*
Power *Normal, Custom Power, Eco*
High Altitude *Off, On*
Custom Power *80-100%*
Lamp Status *Information Only: Lamp 1 On, Off Lamp 2 On, Off*
Lamp Time *Information Only: Lamp 1 Hrs Lamp 2 Hrs*

ALIGNMENT

Rear Projection *Off, On*
Ceiling Mode *Off, On*
Lens Control *Shift, Zoom/Focus*
Lens Memory
- Load Memory *Memory 1-10*
- Save Memory *Memory 1-10*

Center Lens *Press* **ENTER** *to execute*
Warp
- Keystone *Horizontal, Vertical*
- Rotation
- Pincushion/Barrel
- Top Left Corner, Top Right, Bottom Left, Bottom Right
- Custom Warp
- Reset (all warp settings) *Press* **ENTER** *to execute*

Blanking *Top, Bottom, Left, Right, Reset (all blanking settings)*
Edge Blend
- Edge Blend *Off, On*
- Blend Width *Top, Bottom, Left, Right*
- Black Level Uplift
  - Select Area *Top, Bottom, Left, Right*
  - Adjust Width *All, Red, Green, Blue*
- Reset (all edge blend settings) *Press* **ENTER** *to execute*
- Align Pattern *Off, On*

Notes

☞ *Some of the information in this menu map is summarised. See the actual menu on the projector for full detail.*

☞ *Some menu options and controls may not be available due to settings in other menus. These will be shaded grey on the actual menu.*

☞ *Where it would be helpful, some menu options are described in more detail earlier in this operating guide.*

Menu	Sub Menus and Controls
CONTROL	
	IR Address *1,2*
	Eco Network Power *Standard, Eco*
	Auto Power Off *On, Off*
	Auto Power On *On, Off*
	Projector Control *RS232, Network*
	Network *Information only: IP Address, Subnet Mask, Gateway, DHCP*
	Startup Logo *On, Off*
	Trigger *Auto, 5:4, 4:3, 16:10, 16:9, 1.88, 2.35, Letterbox, Native, Unscaled*
	Auto Search *On, Off*
	Dynamic Black *On, Off*
	Language *Select from list*
SERVICE	
	Information only: *Model, Serial Number, Software Version, Active/PIP Source, Pixel Clock, Signal Format, H/V Refresh Rate, Lamp Time, Power On Time,*
	Blue Only *Off, On*
	Factory Reset *Press* **ENTER** *to execute.*

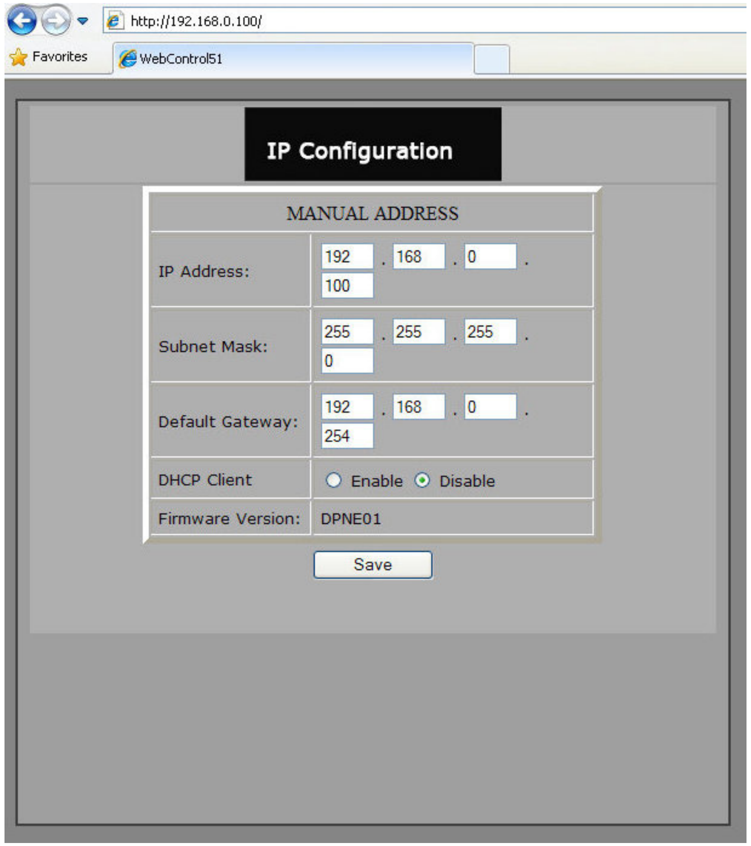
Notes

- *Some of the information in this menu map is summarised. See the actual menu on the projector for full detail.*
- *Some menu options and controls may not be available due to settings in other menus. These will be shaded grey on the actual menu.*
- *Where it would be helpful, some menu options are described in more detail earlier in this operating guide.*

LAN IP Configuration Utility

LAN IP configuration can be carried out using a web browser:

- Point your browser at the projector by typing the ***LAN IP Address*** into the address bar, then press the **Enter** key.
- The embedded IP Configuration webpage should appear.
- Make the settings as required, then click on **Save**.



Notes

☞ ***Eco Network Power*** *must be set to* ***Standard****, if you wish to control the projector via the LAN connection.*

☞ *The default LAN IP address is 192.168.0.100*

If you suspect this has been changed, then you can view the current ***Network*** *settings in the* ***Control Menu****.*

REMOTE COMMUNICATIONS GUIDE

E-Vision 8000 Series

High Brightness Digital Video Projector



Rev A   April 2012

CONTENTS

Introduction

The projector can be controlled by using an external control system or a PC via a LAN or RS232 serial interface, using a terminal-emulation program, such as HyperTerminal.

Operation commands are used to simulate menu operations and determine the settings of the projector, and use the following format:

- All commands consist of ascii text strings starting with the letters 'op', and ending with an ascii Carriage Return character:

  op <operation> <command> [CR]

- The <command> string can take one of the following formats:

	<command>	**Description**
Set	= <value>	Makes the setting take that value.
Get	?	Asks what the current value is. The value is returned as an ascii text string.
Increment	+	Adds 1 to the current value.
Decrement	–	Subtracts 1 from the current value.
Execute	(none)	Performs an action.

Examples

op input.sel = 1 [CR]	sets the input signal to DVI
op input.sel ? [CR]	asks what is the input signal
op brightness + [CR]	increments the brightness setting
op contrastness – [CR]	decrements the contrast setting
op auto.img [CR]	commands the projector to attempt to re-synchronise to the current input source

Notes

☞ *Details of how to connect to the projector, using the serial control or LAN inputs, can be found in the **Connections Guide**.*

☞ *Note: spaces in the commands are necessary.*

eg op input.sel = 1
NOT opinput.sel=1

The Operation Commands

<operation>	<command>	<values>	Notes
INPUT menu			
input.sel	= ?	0 = HDMI 1 = DVI 2 = RGB D-15 3 = RGBHV/YUV 4 = Composite Video 5 = S-Video 6 = SDI/HDSDI/3G 7 = Option Board	
pip	= ?	0 = Off 1 = On	
pip.pos	= ?	0 = Top left 1 = Top right 2 = Bottom left 3 = Bottom right 4 = Split L-R	
pip.pos	= ?	1 = HDMI 2 = DVI 3 = RGB D-15 4 = RGBHV/YUV 5 = Composite Video 6 = S-Video 7 = SDI/HDSDI/3G 8 = Option Board	

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<operation>	<command>	<values>	Notes
pattern	= ?	0 = White 1 = Black 2 = Red 3 = Green 4 = Blue 5 = Cyan 6 = Magenta 7 = Yellow 8 = ANSI 9 = H-Ramp 10 = Grid 11 = Off	
Color.space2	= ?	0 = Auto 1 = YUV HD 2 = YUV STD 3 = RGB-PC (0-255) 4 = RGB-Video (16-235)	
color.space	= ?	0 = Native 1 = EBU 2 = SMPTE 3 = Custom	
input.lock	= ?	0 = Auto 1 = 48 Hz 2 = 50 Hz 3 = 60 Hz	
no.signal	= ?	0 = Logo 1 = Blue 2 = Black 3 = White	
vid.std	= ?	0 = Auto 1 = PAL 2 = SECAM 3 = NTSC	
auto.imgadj	= ?	0 = Off 1 = Auto 2 = Always	

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<operation>	<command>	<values>	Notes
PICTURE menu			
contrast	= ? + -	0 - 200	
dyna.cont	= ?	0 = Off 1 = On	
brightness	= ? + -	0 - 200	
saturation	= ? + -	0 - 200	
tint	= ? + -	0 - 200	Hue
gamma	= ?	0 = Film 1 = Graphics 2 = Video 3 = Linear	
sharpness	= ? + -	0 - 200	
nr	= ? + -	0 - 200	
pic.mode	= ?	0 = High Bright 1 = Presentation 2 = Video	Display Mode
color.temp	= ?	0 = 5000K 1 = 6500K 2 = 7800K 3 = 9300K 4 = Native	
red.offset	= ? + -	0-200	
green.offset	= ? + -	0-200	
blue.offset	= ? + -	0-200	
red.gain	= ? + -	0-200	
green.gain	= ? + -	0-200	
blue.gain	= ? + -	0-200	

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<operation>	<command>	<values>	Notes
aspect	= ?	0 = 5:4 1 = 4:3 2 = 16:10 3 = 16:9 4 = 1.88 5 = 2.35 6 = Letterbox 7 = Native 8 = Unscaled	
zoom	= ?	0 = Off 1 = Crop 2 = Zoom	Overscan
h.total	= ? + -	0-200	
h.pos	= ? + -	0-200	
h.phase	= ? + -	0-200	
v.pos	= ? + -	0-200	
auto.img	(execute)		
LAMPS menu			
lamps	= ?	0 = Single 1 = Dual	
lamp.mode	= ?	0 = Economy 1 = Standard 2 = Dimming	
altitude	= ?	0 = Off 1 = On	High Altitude
lamp.pwr	= ? + -	0-25 (80 % ~100.0 %)	
lamp1.stat	?	0 = Off 1 = On	
lamp2.stat	?	0 = Off 1 = On	

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<operation>	<command>	<values>	Notes
ALIGNMENT menu			
rear.proj	= ?	0 = front 1 = rear	
ceil.mode	= ?	0 = floor 1 = ceiling	
zoomio	+ -	+ = Zoom out - = Zoom in	
focus	+ -	+ = Focus Near - = Focus Far	
vert.offset	+ -	+ = Up - = Down	
horiz.offset	+ -	+ = Right - = Left	
Lens.center	(execute)		
h.keystone	= ? + -	-350~+350	
v.keystone	= ? + -	-200~+200	
warp.rotat	= ? + -	-20 ~ +20 (in ¼° unit)	
warp.pinbrl	= ? + -	-100 ~ +100	
warp.tlc.x warp.tlc.y	= ? + -	x: -192 ~ +192 y: -120 ~ +120	
warp.trc.x warp.trc.y	= ? + -	x: -192 ~ +192 y: -120 ~ +120	
warp.blc.x warp.blc.y	= ? + -	x: -192 ~ +192 y: -120 ~ +120	
warp.trc.x warp.trc.y	= ? + -	x: -192 ~ +192 y: -120 ~ +120	
warp.reset	(execute)		
w2.recover	(execute)		
blank.top	= ? + -	0 ~ 360	
blank.btm	= ? + -	0 ~ 360	
blank.left	= ? + -	0 ~ 534	

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<operation>	<command>	<values>	Notes
blank.right	= ? + -	0 ~ 534	
blank.rst	(execute)		
eb.stat	= ?	0 = Off 1 = On	
eb.wht.top	= ? + -	0, 200 ~ 500	1-199 not allowed
eb.wht.btm	= ? + -	0, 200 ~ 500	1-199 not allowed
eb.wht.left	= ? + -	0, 200 ~ 800	1-199 not allowed
eb.wht.right	= ? + -	0, 200 ~ 800	1-199 not allowed
eb.blk.top	= ? + -	0, 8, 16, 24, 32	
eb.blk.btm	= ? + -	0, 8, 16, 24, 32	
eb.blk.left	= ? + -	0, 4, 8, 12, 16, 20, 24, 28, 32	
eb.blk.right	= ? + -	0, 4, 8, 12, 16, 20, 24, 28, 32	
eb.all	= ? + -	0 ~ 32	
eb.red	= ? + -	0 ~ 32	
eb.green	= ? + -	0 ~ 32	
eb.blue	= ? + -	0 ~ 32	
eb.reset	(execute)		
eb.adl	= ?	0 = Off 1 = On	Align Pattern
CONTROL menu			
ir.addr	= ?	0 = remote code 1 1 = remote code 2	
eco.net.pow	= ?	0 = Off (RJ45 Power On) 1 = On (RJ45 Power Off)	Standard Eco
auto.powoff	= ?	0 = Off 1 = On	
auto.powon	= ?	0 = Off 1 = On	
proj.ctrl	= ?	0 = RS232 1 = network	

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<operation>	<command>	<values>	Notes
net.ipaddr	= ?	<string>	
net.subnet	= ?	<string>	
net.gateway	= ?	<string>	
net.dhcp	= ?	0 = Off 1 = On	
startup.logo	= ?	0 = Off 1 = On	
trig.1	= ?	0 = 5:4 1 = 4:3 2 = 16:10 3 = 16:9 4 = 1.88 5 = 2.35 6 = Letterbox 7 = Native 8 = Unscaled 9 = Auto	
auto.src	= ?	0 = Off 1 = On	
lang	= ?	0 = English 1 = French 2 = Spanish 3 = German 4 = Portuese 5 = Chinese Simplified 6 = Chinese Traditional 7 = Japanese 8 = Korean	

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<operation>	**<command>**	**<values>**	**Notes**
SERVICE menu			
model	?	<string>	
ser.no	?	<string>	
sw.ver	?	<string>	
act.src	?	0 = HDMI 1 = DVI 2 = RGB D-15 3 = RGBHV/YUV 4 = Composite Video 5 = S-Video 6 = SDI/HDSDI/3G 7 = Option Board	Active Source
pip.src	?	0 = HDMI 1 = DVI 2 = RGB D-15 3 = RGBHV/YUV 4 = Composite Video 5 = S-Video 6 = SDI/HDSDI/3G 7 = Option Board	
pixel.clock	?	<number>	MHz
signal	?	<string>	
h.refresh	?	<string>	KHz
v.refresh	?	<string>	Hz
lamp1.hours	?	<string>	
lamp2.hours	?	<string>	
lamp1.reset	(execute)		
lamp2.reset	(execute)		
proj.runtime	?	<string>	
blue.only	= ?	0 = Off 1 = On	
fact.reset	(execute)		Factory reset

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<operation>	<command>	<values>	Notes
Miscellaneous commands			
picture.mute	= ?	0 = Off 1 = On	
power.on	(execute)		Power on
power.off	(execute)		Power off (puts projector into Standby mode)
text.mode	= ?	0 = Off 1 = On	Not available when test pattern is showing
status.check	?	0 = standby 1 = warm up 2 = imaging 3 = cooling 4 = warning	